

APR 16 1928

MOTOR AGE

A Chilton Class Journal Publication
Published Weekly April 12, 1928

An Important Sales Point for You!

Not only can you satisfactorily dispose of the bearing question, but you can also create a favorable impression for your whole car by mentioning Timken Bearings—and telling your prospect the points of application.

Twenty-seven years of steady national advertising, combined with the well-known satisfactory performance of the product, have made the public accept the presence of Timken Bearings as evidence that similar quality is built into the entire car.

THE TIMKEN ROLLER BEARING CO., CANTON, OHIO

The value of mentioning Timken Bearings is even more than a matter of prestige. There are vital, tangible engineering reasons for Timken dominance—the exclusive combination of Timken tapered construction, Timken *POSITIVELY ALIGNED ROLLS*, and Timken electric steel.

“More than anti-friction bearings,” Timkens protect fully against the wear of side-thrust, shock, torque, speed and weight.

TIMKEN *Tapered
Roller* **BEARINGS**

New Beauty
Plus Hupmobile Prestige
Captures
Wider Markets for Dealers

Since the introduction of the distinctive new Hupmobile Century Six and Eight, Hupmobile sales have penetrated into practically every market above the \$1,000 class.

Repeatedly, Hupmobile dealers report sales of the Century Eight to prospects who had considered cars in the price range above \$2,500. And from the lower priced field, hundreds of other motorists are coming to the Century Six for the style and beauty they cannot hope to duplicate elsewhere.

The mounting record of Hupmobile sales is significant both of the century's highest accomplishment in

body design and the deep-seated respect which buyers everywhere have for traditional Hupmobile standards of engineering and manufacture.

To dealers interested in sharing in the profits of the greatest year in Hupmobile history, we will gladly submit details of the Hupmobile franchise—pronounced one of the most liberal in the industry.

50 standard and custom-equipped models on three different wheelbases—the Six of the Century, the Century Eight and the Century 125 Eight—offer a splendid selling range. Write or wire for complete information.

HUPP MOTOR CAR CORPORATION
Detroit, Michigan

H U P M O B I L E

The NEW
CENTURY
EIGHT

The SIX
of the Century

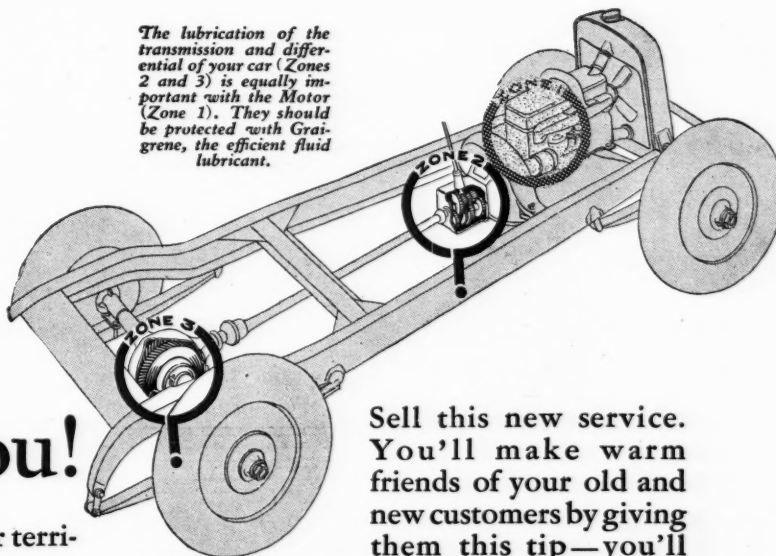
The
CENTURY
125 EIGHT

GRAIGRENE

[PRONOUNCED GREY-GREEN]

— the fluid lubricant for
transmissions, and differentials —

The lubrication of the transmission and differential of your car (Zones 2 and 3) is equally important with the Motor (Zone 1). They should be protected with Graigrene, the efficient fluid lubricant.



MEANS Big Spring Profits for You!

This Spring every motorist in your territory should have heavy, sticky, gummy grease completely flushed out of transmission and differential and replaced by Graigrene, the fluid lubricant that really protects these vital areas. Graigrene gives all cars new Spring pep—new touring fuel-mileage. It reduces friction to an absolute minimum and protects every single gear tooth.

Every car needs 8 pounds of Graigrene. Busses and trucks take 20 pounds. Tractors require 25 pounds. *And you make 50% profit per pound.*

Link your local advertising with Graigrene's national campaign. Advise motorists of the dangers of running their cars with last autumn's, sticky, worn-out grease. Heavy grease means gears mesh dry, unprotected, steel-against-steel. Big repair bills follow.

Sell this new service. You'll make warm friends of your old and new customers by giving them this tip—you'll make big profits. You can pay your rent with Graigrene.

5 REASONS

Why Motorists are Using

GRAIGRENE

- 1 Graigrene performs perfectly in any temperature—from 60° below zero to 200° above.
- 2 Graigrene gives new pep for Spring—permits motor to deliver 7% more power than it can with heavy, sticky, gummy grease.
- 3 Graigrene, used instead of heavy grease, cuts friction load 26%.
- 4 Graigrene, used instead of heavy grease, increases fuel mileage 5.55% per gallon.
- 5 Graigrene is easy to drain and refill four times a year. That's a story every motorist heeds.

GET THE LONG GREEN WITH GRAIGRENE

Manufactured by

Viscosity Oil Company

Established 1894

W. D. SIMMONS, President

Central Manufacturing District, CHICAGO

Phone Yards 7196





HOLMES Heavy Duty *Power Driven* WRECKER

Boom capacity 5 tons—Double Line capacity 10 tons.

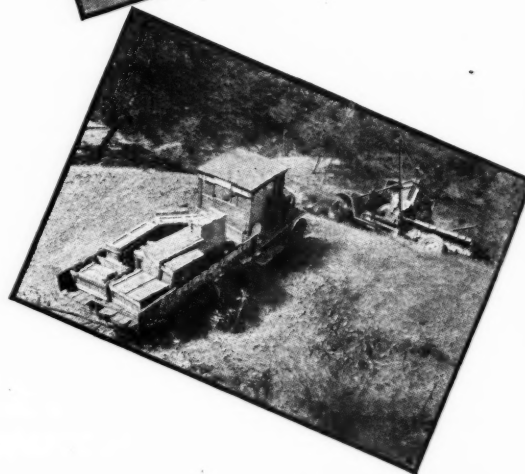
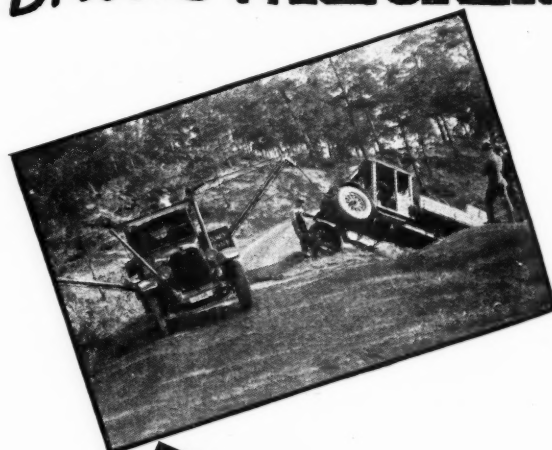
A heavy duty power driven wrecker—the first ever developed and the only one on the market. It will not only handle light trucks and passenger cars, but will efficiently handle the largest trucks and busses, or any commercial job requiring a lift or pull.

In the design of this Heavy Duty Wrecker all the desirable features of the famous Holmes Wrecker No. 485 have been retained and the operation in most cases is the same. Power is delivered to the service drums direct from your truck motor. Triple control levers permit operation either from the ground or driver's seat.

It may be mounted on any truck chassis of suitable capacity. Service lines may be operated separately or together. Each drum is equipped with 200 feet of flexible steel cable. Drums can be disengaged to permit free pay-out of service lines or they may be removed and horizontal capstans inserted in their place, permitting the use of rope and snatch block for various commercial work.

Write at once for descriptive literature or ask your jobber for prices and complete information.

ERNEST HOLMES COMPANY
CHATTANOOGA, TENNESSEE



MOTOR AGE

Vol. LIII

Reg U. S. Pat. Off.
Established 1899

No. 15

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under Act of March 3, 1879.



Real Performance

The Franklin Super Single-Stage —a Full Size Compressor!

The performance of the Franklin Super Single-Stage—the economical air compressor can make Free Air Service—worthwhile for you! And here's why!

It costs less to buy and less to operate. It's trouble free!

The Franklin Unloader allows the motor to start free against pressure! A saving of current—a protection against burned-out motors!

The Oil Separator absolutely prevents the intake of oil or sediment. Clean air at all times!

Motors are chosen on proven efficiency. Franklin compressors are belt driven with the greatest possible distance between pulley centers.

An Automatic Pressure Control Switch will start the motor when the pressure decreases to 120 lbs. and throw it off at 150 lbs.

Franklin compressors are fully automatic—simple in construction, yet the sturdiest of all! Ask your jobber about Franklin Compressors and write us for prices and illustrated literature!

\$175⁰⁰

FRANKLIN AIR COMPRESSOR CORP.
NORRISTOWN PENNA.



There is a Franklin Compressor for every requirement. All embody exclusive, patented Franklin features that give them the lead in the field for rugged, trouble-free performance.



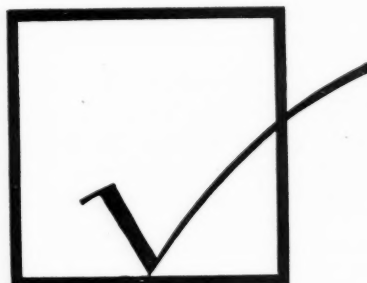
Franklin

Manufacturers of a Complete Line of Air
Compressors and Paint Spray Equipment

If... You Want a Catalog or Literature

The Size or Price of Any Garage
Equipment or Parts or Anything
Automotive that Interests You—

Just Ask Us!



Come to Automotive Headquarters!

If you are interested in information about shop equipment, tools, replacement parts, accessories, etc., check them in the squares below, and MOTOR AGE will see that data are forwarded you promptly. By taking advantage of this service, you do not obligate yourself in any way—nor are you signing an order for anything.

If you want catalogs or literature—just ask us. This is the old established MOTOR AGE "Clearing House" service, made easier for you.

Tear Off the Coupon—Check the Items—Information Will Follow

MAIL TO

Motor Age

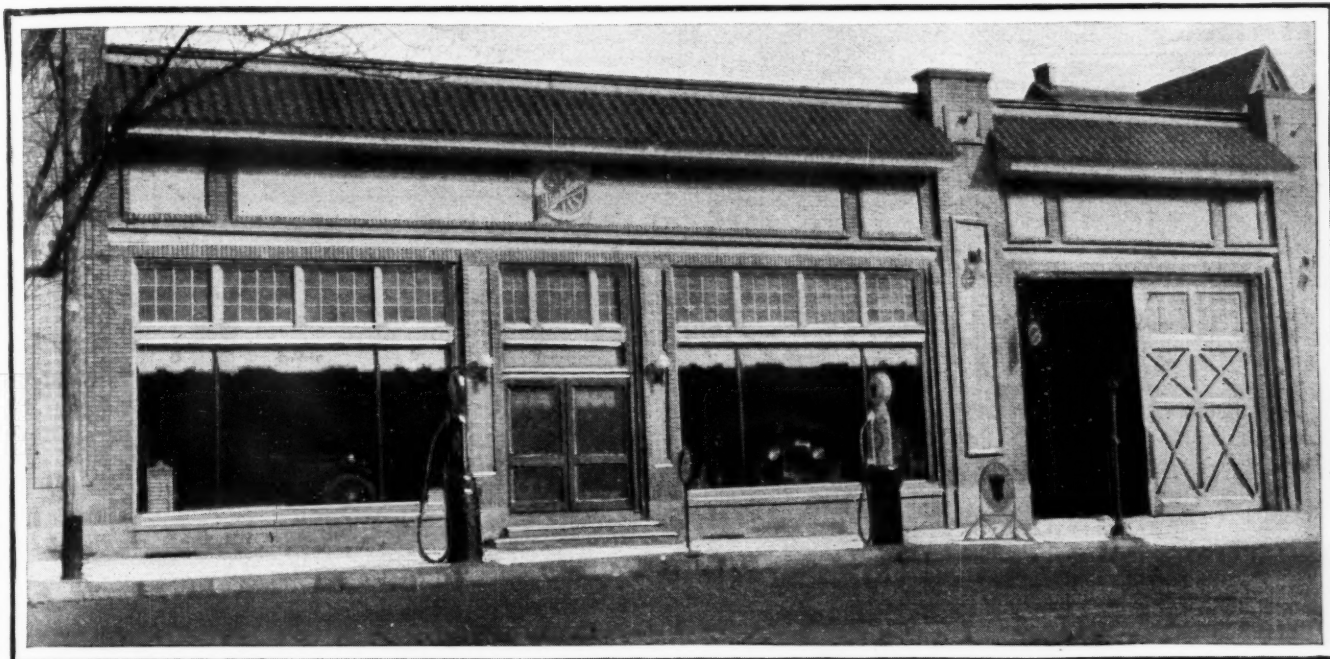
Chestnut and 56th Sts., Philadelphia, Pa.

I want catalogs or literature about the "Clearing House" items checked below. This inquiry is not an order, nor does it obligate me in any way.

Equipment and Tools	<input type="checkbox"/> Drills, electric	<input type="checkbox"/> Steam cleaning equip-	Replacement Parts	Shop Supplies
<input type="checkbox"/> Air compressors	<input type="checkbox"/> Drills, twist	<input type="checkbox"/> ment	<input type="checkbox"/> Armatures, rewound	<input type="checkbox"/> Babbitt metal
<input type="checkbox"/> Aligners, piston and rod	<input type="checkbox"/> Engine stands	<input type="checkbox"/> Tanks, parts cleaning	<input type="checkbox"/> Axle shafts	<input type="checkbox"/> Cement, gasket
<input type="checkbox"/> Aligners, wheel	<input type="checkbox"/> Fender tools	<input type="checkbox"/> Torches, blow	<input type="checkbox"/> Bearings, ball	<input type="checkbox"/> Cement, rubber
<input type="checkbox"/> Bearing finishers	<input type="checkbox"/> Gages	<input type="checkbox"/> Vulcanizers	<input type="checkbox"/> Bearings, replaceable	<input type="checkbox"/> Cement, iron
<input type="checkbox"/> Bearing babbitting equipment	<input type="checkbox"/> Grinders, bench	<input type="checkbox"/> Washers, car	<input type="checkbox"/> Brake lining	<input type="checkbox"/> Cement, radiator
<input type="checkbox"/> Benches, work	<input type="checkbox"/> Grinders, crankshaft	<input type="checkbox"/> Washers, lock	<input type="checkbox"/> Bushings	<input type="checkbox"/> Cleaners, floor
<input type="checkbox"/> Benches, electric test	<input type="checkbox"/> Grinders, flexible shaft	<input type="checkbox"/> Welding equipment & supplies	<input type="checkbox"/> Cable, battery	<input type="checkbox"/> Covers, fender and upholstery
<input type="checkbox"/> Bins, parts, steel	<input type="checkbox"/> Grinders, valve	Small Tools	<input type="checkbox"/> Chains, timing	<input type="checkbox"/> Flux, soldering or babbitting
<input type="checkbox"/> Brake reliner	<input type="checkbox"/> Guns, grease	<input type="checkbox"/> Clamps	<input type="checkbox"/> Facings, clutch	<input type="checkbox"/> Hacksaw blades
<input type="checkbox"/> Brake tester	<input type="checkbox"/> Hoists, shop	<input type="checkbox"/> Files	<input type="checkbox"/> Gaskets	<input type="checkbox"/> Packing, pump
<input type="checkbox"/> Brushes, wire	<input type="checkbox"/> Hoists, wrecking	<input type="checkbox"/> Gages, dial	<input type="checkbox"/> Gears, rear axle	<input type="checkbox"/> Rod, welding and brazing
<input type="checkbox"/> Carbon burning equipment	<input type="checkbox"/> Horses, shop	<input type="checkbox"/> Gages, feeler	<input type="checkbox"/> Gears, timing	<input type="checkbox"/> Paper, emery and sand
<input type="checkbox"/> Chargers, battery	<input type="checkbox"/> Jacks, dolly	<input type="checkbox"/> Hammers	<input type="checkbox"/> Gears, ring	<input type="checkbox"/> Solder
<input type="checkbox"/> Cleaners, engine	<input type="checkbox"/> Lathes	<input type="checkbox"/> Micrometers	<input type="checkbox"/> Ignition parts	Accessories
<input type="checkbox"/> Compound, grinding	<input type="checkbox"/> Lubricators, pressure	<input type="checkbox"/> Pliers	<input type="checkbox"/> Muffler	<input type="checkbox"/>
<input type="checkbox"/> Crankshaft returning tool	<input type="checkbox"/> Metal bumping tools	<input type="checkbox"/> Reamers, expanding	<input type="checkbox"/> Pistons	<input type="checkbox"/>
<input type="checkbox"/> Cutters, bolt	<input type="checkbox"/> Paint spray equipment	<input type="checkbox"/> Reamers, valve	<input type="checkbox"/> Piston pins	<input type="checkbox"/>
<input type="checkbox"/> Dies	<input type="checkbox"/> Presses	<input type="checkbox"/> Screw Plate sets	<input type="checkbox"/> Plates, clutch	<input type="checkbox"/>
<input type="checkbox"/> Drain pans, oil	<input type="checkbox"/> Pullers, bushing	<input type="checkbox"/> Taps, screw & pipe	<input type="checkbox"/> Rings, inner	<input type="checkbox"/>
<input type="checkbox"/> Drill press	<input type="checkbox"/> Pullers, wheel and gear	<input type="checkbox"/> Tire tools	<input type="checkbox"/> Rings, piston	<input type="checkbox"/>
	<input type="checkbox"/> Reamers, line	<input type="checkbox"/> Wrenches	<input type="checkbox"/> Shims	<input type="checkbox"/>
	<input type="checkbox"/> Reaming equipment		<input type="checkbox"/> Valves	<input type="checkbox"/>
	<input type="checkbox"/> Soaps, car washing		<input type="checkbox"/> Wire, ignition	<input type="checkbox"/>
	<input type="checkbox"/> Soldering coppers		<input type="checkbox"/> Wire, primary	<input type="checkbox"/>

Name Street and No.

City State



Studebaker profits built this modern sales and service station for Keiser Brothers, Pottstown, Pa.

Bigger Profit *from a Small Market*

SIX years ago the Keiser brothers obtained the Studebaker franchise for Pottstown, Pennsylvania—a town of 17,431 population. An iron shed was their first shop. A small store served for their first showroom. Despite limited automobile experience, during the first sixteen months these brothers sold forty-two new cars.

By 1925 Keiser Brothers had prospered so they could have the best showroom and shop in Pottstown—investing \$80,000 which they had earned in selling Studebakers.

"We credit our steady growth," says Sam Keiser, "not to ourselves alone but to our good fortune in obtaining the Studebaker franchise. The new Erskine Six opens up a still larger market for us. Studebaker is one factory that really co-operates."



Where the Keiser Brothers began selling Studebakers six years ago

Four Lines in One—\$795 to \$2250

Studebaker now offers its dealers four great lines of cars, ranging from \$795 to \$2250—record-breaking values . . . champion performers! But Studebaker goes further by giving its dealers close friendly co-operation in selling new and used cars, in building service business, financing, etc. Because of the assistance Studebaker renders in helping its dealers to grow and to prosper, Studebaker has won the distinction of being America's most friendly factory.

The automobile dealer who desires a profitable, stable franchise such as Studebaker offers is invited to write to Dept. 51, The Studebaker Corporation of America, South Bend, Ind. All inquiries will be held as confidential.

STUDEBAKER

America's Most Friendly Factory

A M E R I C A ' S F I N E S T T Y P E O F M O T O R

Performance that sells

Falcon-Knight Six with its famous double-sleeve-valve engine, has set a new standard of performance that is attracting widespread attention. In every form of demonstration it excels with a smooth, quiet flow of power that amazes the prospective buyer.

All Falcon-Knight dealers are agreed on this one point—let a prospect drive the car and he will sell himself every time.

Falcon-Knight Six is winning sales on performance and building a reputation on endurance.

Write or wire today for full information on the Falcon-Knight franchise.

FALCON MOTORS CORPORATION • DETROIT, MICH.

FALCON-KNIGHT SIX

America's Finest Type of Motor



It prevents Spark Plug Paralysis

NINE out of ten customers who come into your store need a new set of spark plugs—but they don't know it.

For 9 cars out of 10 are crippled by spark plug paralysis—carbon lodges in the crevices of the plugs and forms "leak-holes" through which part of the current escapes.

Secretly the vitality of the plug is undermined. Secretly the power of the engine is crippled. Usually the car driver barely notices the oh-so-gradual loss of pep and power.

Any new set of spark plugs is healthy—temporarily. But now comes a spark plug that remains healthy—one that defies spark plug paralysis. It is the new Original-Bosch Pyro-Action Spark Plug.

How Pyro-Action Overcomes Spark Plug Paralysis

Pyro-Action is the technical term



What is the most common cause of spark plug troubles?

We recently asked 1000 motorists. 61% said fouling. Pyro-Action shields the insulator of the Original-Bosch plug from fouling by burning away carbon as fast as it touches the stone.



Original - Bosch Pyro - Action Spark Plugs have black bodies, and are marked with the name "Robert Bosch" and the trademark shown below.

-and builds new plug sales for dealers

for the combination of factors in this new plug which enables it to ward off spark plug paralysis.

One factor that makes Pyro-Action possible is the insulator of the plug. It absorbs and retains sufficient heat to burn off excessive oil, or liquid fuel before it has time to form carbon.

This spark plug retains its firing efficiency during the life of the car. It maintains that reliable, penetrating spark usually enjoyed only when a car is new. It saves gasoline, makes the engine run smoother, and gives more power not merely for a few thousand miles but for a longer period of time than ever before.

The story of Spark Plug Paralysis and how it is defied by the Pyro-Action Spark Plug, will create for you new spark plug sales, new profits and new friends. For you can well imagine how every customer is going to boast to his friends about the new pep in his car since you sold him a set of Original-Bosch Pyro-Action Spark Plugs . . . mail coupon for full information.

The Original
Bosch
Pyro-Action
SPARK PLUGS

Robert Bosch Magneto Co., Inc.
3601-H Queens Boulevard, Long Island
City, N. Y.

Please send full facts about Original-Bosch Pyro-Action Spark Plugs and about your dealer franchise for progressive accessory dealers.

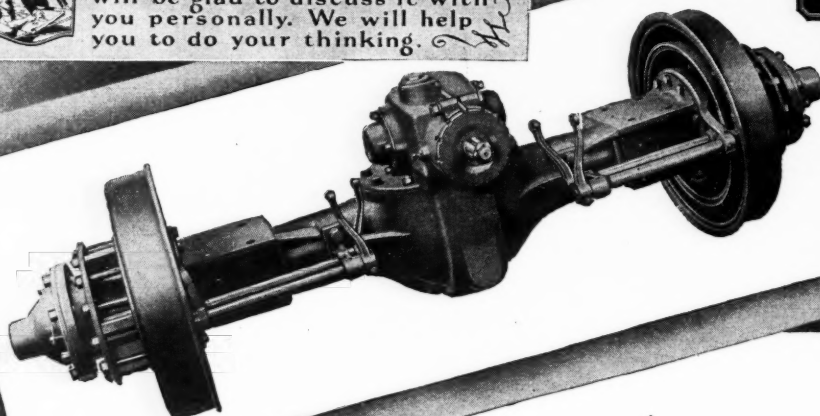
Name.....

Address.....



Whenever you have a bearing problem our expert engineers will be glad to discuss it with you personally. We will help you to do your thinking.

New Departure
Equipped



Wisconsin Knows— New Departures Save You Money

WHILE your truck is running up a service bill, it is also losing pay loads on the road. Wisconsin engineers have eliminated the item of axle bearing adjustments by using New Departure Ball Bearings.

They have faith in New Departure's precision construction, electric furnace high carbon chrome steel and the fact that nothing rolls like a ball—since New Departures as a result obtain permanently rigid support and alignment which make for longer truck life with depreciation delayed indefinitely.

THE NEW DEPARTURE MFG. COMPANY

BRISTOL, CONNECTICUT

Detroit

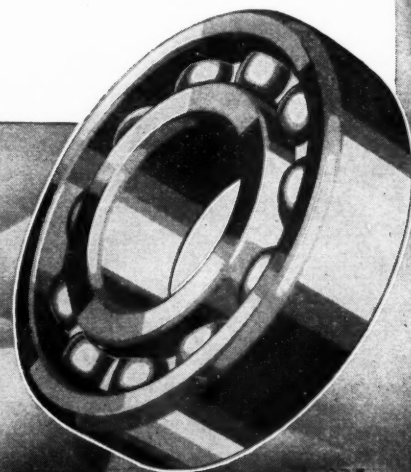
San Francisco

Chicago

More than 55 makes of commercial vehicles benefit by the use of New Departure Ball Bearings in their Wisconsin Axles. Some of these are:

Acme
Butler
Brockway
Biederman
Clarkspeed
Connell
Coleman
Century
Douglas
Denby
Eagle
Greenville
Guilder
Gramm
Hug
Hale
Hahn
Jarrett
Kissel
Lange
Le-Blond-Schacht
Larrabee-Deyo
Maccar
Menominee
Motor Transit
O'Connell
Oskosh
Ruggles
Red Ball
Titan

New Departure Quality Ball Bearings



MOTOR AGE

VOLUME LIII

Philadelphia, April 12, 1928

NUMBER 15

Mellon Wants Tax Retained

Says Demand for Repeal Does
Not Come From the
Car Owner

BLAMES MAKERS

WASHINGTON, April 7—A tax reduction of \$201,000,000 is all that the Treasury Department's finances will warrant, Secretary of Treasury Mellon this week told the Senate Finance Committee when he presented data showing that the surplus at the present time is approximately \$400,000,000. He told the committee that the present automobile tax of 3 per cent, which was repealed by the House, should be restored and thus save \$66,000,000.

In urging restoration of the present automobile levy, the secretary declared that "the insistent demand for repeal of this tax does not come from the automobile purchasers but from the manufacturers and dealers who have organized an intensive propaganda and of necessity do not look at our tax problem as a whole, but concentrate their attention on the one tax which they believe affects their own interest."

"Tax revision on the basis of meeting the demands of special interests such as the automobile industry," he said, "inevitably leads to serious maladjustments of tax problems. As a principle, it is difficult to justify the repeal of this tax. Levied at a low rate, it imposes no bitter hardships, yet by reason of the broad base upon which it rests, it produces substantial income."

The secretary's assertion that the repeal of the excise tax was not sought by the users was emphatically denied in a statement issued by J. Borton Weeks, of the American Motorists' Association, expressing the views of 250,000 motorists.

(Turn to page 20, please)

Stock Marks Not Official

NEW YORK, April 7—Mainly because of unequal weather conditions during the stock car races held at Daytona Beach last February the A.A.A. has refused to allow the marks made to stand as official records.

Model A Displaces White House Horse

—+—+—

WASHINGTON, April 10—The last outpost of "Old Dobbin" in the White House was taken last week by the more modern form of transportation when the White House housekeeper's surrey, long familiar to Washington, was displaced by a new Ford.

—+—+—

The White House carriages and stables in the main were displaced by President Taft. The last cabinet officer to "succumb" was Postmaster Burleson, who up until almost the day of his resignation was a familiar figure on the streets of Washington as his colored coachman drove him to and from his office, behind two high-spirited horses.

—+—+—

The White House housekeeper, Mrs. Riley, has been the last to give up the one-horse-shay, and thus make the historic mansion 100 per cent motorized.

Rickenbacker and Chamberlin May Get Medals

WASHINGTON, April 11—A resolution proposing that "Eddie" V. Rickenbacker, foremost ace in the American Aviation Service during the war, be given the Congressional Medal of Honor was introduced in the House this week by Rep. Royal C. Johnson, of South Dakota. In introducing the bill, which was referred to the Committee on Military Affairs, Mr. Johnson paid tribute to the new automobile manufacturer, declaring that it was an honor which Congress should readily bestow on him.

A similar measure was introduced by Rep. W. W. Cohen, of New York, to award the Congressional Medal of Honor to Clarence D. Chamberlin.

Coast Merger Goes Forward

Retail Slant is Latest Factor
in Proposed Jobber
Consolidation

TO FIGHT CHAINS

LOS ANGELES, April 11—Negotiations for the consolidation of all A.E.A. jobbers in California and possibly the entire Pacific Coast States into a \$10,000,000 corporation, mention of which was made in a recent issue of MOTOR AGE, are said to be "progressing satisfactorily," but because of the multitudinous details to be worked out, it will be some weeks, and possibly months, before a definite announcement of consummation is made.

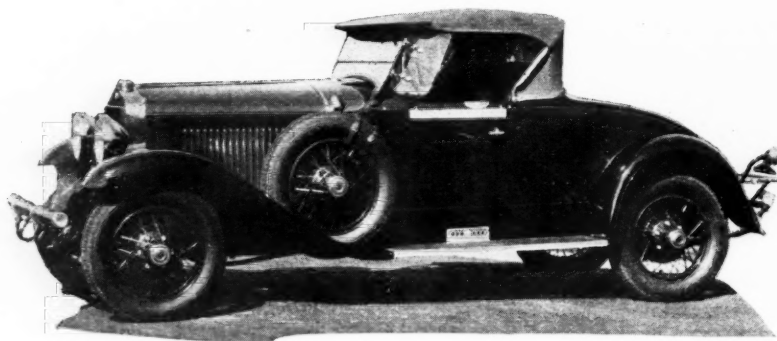
It now seems almost certain that the great chain of community stores to be established by the corporation, if it comes into being, will do a retail as well as a wholesale business. As the situation now stands, a motorist who may want to purchase four or five different articles is virtually compelled to go to a cut-rate chain store to be certain of having his wants satisfied. The independent automotive dealer carries only a meager stock, if any stock at all. With all the educational work conducted by the jobbers having failed to bring about adequate distribution, the jobbers have about concluded they must provide this retail service to recapture their share of this market.

Where the many different manufacturers whose lines are now handled by the different jobbers included in the negotiations for the merger will stand in the distribution picture is one of the important questions that still remains unsettled. It is assumed that the corporation will restrict its lines to only a few brands in each instance.

Rengers With Gardner

ST. LOUIS, MO., April 10—Fred H. Rengers, recently resigned as general sales manager of the Moon Motor Car Co., with which he was associated 14 years, has been appointed general sales manager for the Gardner Motor Co., Inc., according to a statement by President Russell E. Gardner, Jr.

Moon Aerotype Royal Roadster



THE Moon Motor Car Co. has just gone into production on this distinctive 8-75 roadster. It is in addition to the recent announcement of the new line of 8-80's. This roadster comes equipped with wire wheels and luggage carrier with room for two extra wire wheels in the fender wells

Thomas Engineering Chief of Jordan Co.

CLEVELAND, April 8—Stanley R. Thomas, who has been associated with the Jordan Motor Car Co. for eight years, has been appointed chief engineer in place of Russell S. Begg, resigned.

Mr. Thomas was formerly associated with the University of Michigan as instructor in mechanical engineering. For five years he was experimental engineer for the Hudson Motor Car Co. and later associated with the General Motors Corp. as assistant engineer in the central division.

Bloch, Hispano Driver, Arrives in America

NEW YORK, April 6—Robert Bloch, French racing driver, arrived yesterday on the Ile de France with the Hispano-Suiza automobile which is to compete with the Stutz Black Hawk at the Indianapolis Speedway, April 16. Bloch will alternate with Charles T. Weymann in driving his car in the race.

Simultaneously with the arrival of Bloch, Clarke D. Pease, president of the Hispano-Suiza Co. of America, announced that steps would be taken to prevent the race unless the public is fully informed of the fact that the Hispano-Suiza company is in no way backing the race.

Modern Aircraft

EXCEPTIONALLY complete information of value on all practical aviation developments is in the book, "Modern Aircraft," by Major Victor W. Page, Air Corps, U.S.R. This book in-

cludes 855 pages and carries 500 illustrations. Among the subjects covered are descriptions of the various types of aircraft, their construction, principles of operation and commercial applications. This book is published by Norman A. Henley Pub. Co., 2 W. Forty-fifth St., New York City.

Willys Ships Trainload of Cars to Scandinavia

NEW YORK, April 6—Willys-Overland, Inc., has shipped from its Toledo plant a single 60-car trainload of Whippet and Willys-Knight cars for shipment to Scandinavia. These cars will be shipped unboxed and driven from the ship to various distributors in Norway and Sweden under their own power.

Johnson With Fleming

SPOKANE, WASH., April 9—S. Darwin Johnson has resigned as sales manager of the Western Motor Co., Hupp distributor, and joined the W. P. Fleming Co., Velie distributor, in a similar capacity.

Goodyear to Use Movies

NEW YORK, April 7—The Goodyear Tire and Rubber Co. will use motion pictures this year to drive home the cardinal points of its sales policy in the annual dealer meetings held throughout the country. A new four-reel picture called "Ten Points to Progress" has just been completed for the company, and the sales meetings will start immediately. More than 20,000 Goodyear dealers from Maine to California will have the opportunity to see this picture at the 1928 series of meetings.

Surplus Labor Aided by Roads

Completion of Government Projects is Urged to Keep Men Busy

NEW YORK, April 11—Road building, now an industry well over the billion-dollar classification, takes up much of the slack in labor surplus, according to the findings of a recent survey.

In constructing the 7000 miles of concrete rural roads and 3200 miles of streets last year, for instance, it was necessary to transport and mix 38,000,000 cu. yd. of cement, sand, gravel, stone and slag. To build a single mile of concrete roadway 18 ft. wide requires roughly two train loads of these materials. The amount of labor required for these operations can be easily appreciated.

Economists have long been urging that needed public improvements be pushed beyond the blueprint stage into actual construction during the short industrial depressions that may be occasionally expected. Accrued government surpluses, they maintain, could well be applied to road-building projects and other improvements. Practically every community has had projects in contemplation for a long time. These should be built without delay, for they will help keep labor employed until conditions readjust themselves.

Recently Representative Celler of Brooklyn presented a resolution in the House suggesting that Federal government construction of roads and other structures be speeded up to relieve the present unemployment situation. He points out that factory unemployment is greater now than during the industrial slump of 1921. Representative Celler's proposal is much in line with that of Governor Smith of New York, who recently urged the acceleration of all of New York State's construction projects in the effort to stabilize employment.

Looking back over this nation's economic history for the last few years, it is apparent that highway building has been of prime importance in giving the coin of the realm a wide distribution. The construction of public improvements, particularly of highways, it must be borne in mind, accomplishes something else and that is the deeper rooting of prosperity.

Strikingly significant is the fact that this, the world's most prosperous country, has more good roads than any other nation. And more are needed, say authorities.

Millions Change Plugs Each Year

Today's Engines Make Complete New Set Economical, Says Caswell

DETROIT, April 11—"Millions of motor car owners now recognize the greater satisfaction as well as the operating economy resulting from installing new spark plugs at least once a year. Car manufacturers, acting on the results of exhaustive tests, recommend in their instruction books that spark plugs be renewed regularly."

The speaker was F. B. Caswell, director of sales of the Champion Spark Plug Co.

With the introduction of high speed engines it was proved beyond question that spark plugs, no matter how well made they might be, lost efficiency more rapidly than with engines of the old type.

"More than four years ago we began to tell why it was desirable—the actual monetary economy—to renew spark plugs at least once a year. The idea was not well received. Both the trade and the public took it for granted that so long as a spark plug fired that was all that was necessary.

"But the soundness of our statements stood out. Motorists gradually came to realize that it was to their best interest to discard spark plugs that had given 10,000 miles of service. This climaxed with an advertising drive of ours four years ago, which we called Champion National Change Week, during which we urged motor car owners generally to install a complete set of new spark plugs.

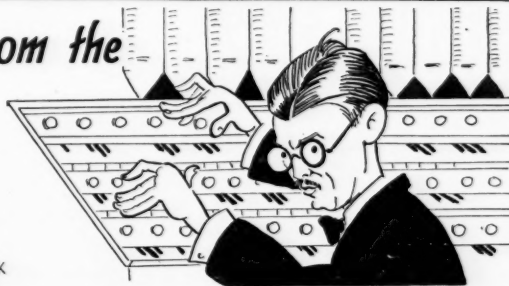
"Surveys since made show that tens of thousands took this advice the first year. In 1926 the results of National Change Week indicate that nearly a million automobile owners installed new spark plugs during it and the several succeeding weeks. In 1927 the number actually exceeded a million. We believe that still more owners will do so this year. National Change Week for 1928 has been fixed as from May 6 to 12."

Dowell With Murray Corp.

DETROIT, April 9—A. F. Dowell has been appointed general superintendent of Plant No. 1 (Body Division) of the Murray Corp. of America. Mr. Dowell has been associated with automobile body manufacture for 19 years, starting with the Briggs Manufacturing Co. here and working up from a job in the plant to the position of vice-president and assistant general manager.

Tunes From the House Organs

GEORGE T. HOOK
AT THE CONSOLE



THE curtain is up on MOTOR AGE's departmental infant. "Tunes from the House Organs" steps out from the dim, cluttered recesses of an editorial brain and trips gracefully to the center of the stage.

Spotlight!

Business of curtseying.

Gents, give the little kid a big hand!

In preparing this column the gentleman (a deserved title because he takes his hat off in an elevator) whose typographical signature you see above, will act merely in the capacity of organist. The compositions he will render for your edification, pleasure and amusement will be those of recognized masters—brother organists playing house organs that peal peal upon peal from factory, association, distributor, jobber, dealer, service station and garage the length and breadth of the land. He will choose their masterpieces and broadcast them to the vast, appreciative MOTOR AGE audience.

Here and there the reader will, of course, perceive a brilliantly executed variation (ah-h!), an harmonious succession of arpeggios (ah-h-h-h!), or an exquisitely voiced appoggiatura (oh, he—ll!), but in each case the momentarily inspired hand of the novice will be readily detected and you will know that the consoler is to blame.

This department, then, will be an organism made up of organisms. It will be strictly eclectic—which is as nice a term as can be imagined for "pastepot, shears and comment." The house organs published by concerns in the automotive industry on which we will draw are too numerous to be named in this limited space, but we hope that as time passes every one of them will have contributed something to your—it's worth repeating for emphasis—edification, pleasure and amusement.

At the present time MOTOR AGE is on the mailing list of a large number of house organ sponsors, but the courtesy will need to be extended if it is to be complete. So, if you are in doubt of having honored us, scan the "M's" in your mailing list and make certain that you have bestowed the blessing.

We are well aware that some house organs, at one time or another, contain items of a confidential nature not intended for the scrutiny of the trade in general. We promise discretion—not as the better part of valor, but as the better part of business ethics. Discretion is one thing we won't have to write our congressman for.

For the most part, however, house organs are made up of material that is savory sauce, so to speak, for goose and gander. And such sauce, concocted by able chefs, will (to mix a gastronomic metaphor with a musical one) be sweet music to the ears of our readers, and will, we trust, afford a degree of righteous pleasure to the chefs whose concoctions we shall deem worthy of reproduction.

So much for the announcement. The first concert will be given next week.

According to Wm. Robert Wilson, chairman of the board and president, who announced the appointment, Hupmobile and Marmon coach work is being produced in record quantities, with still larger production scheduled for the coming months.

Opens Two Salesrooms

MINNEAPOLIS, April 6—Belden-Snyder Co., one of the oldest firms in continuous service, has opened two new Durant salesrooms, one at 1017 Fourth Ave., S., and the other at 1416 Hennepin Ave.

Hispano Holds Many Records

Car That Battles Stutz Apr. 16
"Stock Champion of
Europe"

NEW YORK, April 11—Ample reason for giving the informal title of "Stock champion of Europe" to the Hispano-Suiza car that will meet a Stutz Black Hawk in a 24-hour international match race on the Indianapolis Motor Speedway on April 16, is found in the records established by Hispano-Suiza motors on land, on the water and in the air. Stutz has confined its endeavors to the road, but the famous French motor has extended its supremacy to the water and the air, as well.

The motor now used in Hispano-Suiza cars, which will power C. T. Weymann's Boulogne model in the battle with the Stutz Black Hawk car on the Indianapolis track, was developed for aviation use during the World War. Not until this motor was perfected did the Allied success in the air really materialize, and by the end of the war, nearly half of all aviation motors in Allied service were Hispano-Suizas.

Hispano motor car building dated from 1904, but after the war the new aviation motor was adapted to automobile and marine use, and the design has been maintained. With Barnato driving, a Hispano-Suiza established new world's speed records at Brooklands track, England, in 1924, for 200 and 300 miles, for 250, 300, 400 and 500 kilometers, and for two and three-hour runs. In the same year, new world's aviation speed records were made by a plane powered with a Hispano-Suiza motor. Power boats equipped with Hispano-Suiza motors attain speeds of from 65 to 85 m.p.h.

Passes Quarterly Div.

NEW YORK, April 9—Lowering of inventories by the declining price of crude rubber to a point which brings total assets below a minimum allowed for dividend payments caused the United States Rubber Co. to pass the \$2 quarterly preferred dividend due at this time.

This passing of the dividend is necessitated by an indenture covering the company's 6½ per cent serial notes, which specifies that no dividend shall be paid unless after the payment of such dividend the value of the current assets will equal at least twice the principal amount of the indebtedness. Reduced inventories have lowered the assets below this point.

Joins Breeze



C. A. Grainger

MR. GRAINGER, formerly associated with the American Hammered Piston Ring Co., as general sales manager, has joined the executive staff of Breeze Corporations, Inc., as sales manager. He will develop a merchandising program for the complete line of Breeze products, manufactured by the Provident Machine Co., Mayo Equipment Co., Breeze Metal Hose & Mfg. Co. and Cox Corp.

General Motors Club Will Hold Meeting

LOUISVILLE, KY., April 11—George T. Holmes, manager of the Louisville division of the Leyman Motor Co., Buick dealer, who was recently elected secretary of the newly formed General Motors Club, of Louisville, composed of the various handlers of G.M.C. products at Louisville, in a discussion of the organization, said that insofar as is known it is the first and only club of its kind in the country, and that it was developed by the local dealers through their own initiative, without any factory suggestion.

It is planned to hold meetings once a month of the firm heads, also meetings of all employees, once or twice a year, with probably a banquet, which would bring together some four or five hundred workers, who would be given an opportunity to hear talks from officers of the various local G.M.C. organizations, as well as special speakers from individual factory units, and also general office men.

Looks Good for Second Quarter

Both Sales and Output Are
Showing Seasonal
Activity

NEW YORK, April 11—Continuance of automotive business on an even keel is indicated for the second quarter of 1928, now two weeks gone. N.A.C.C. members during the first quarter went ahead of the same period in 1927 both in sales and in production, but the total number of passenger cars delivered at retail by the industry including Ford appears to have been slightly less during the first three months of this year than during the first three of last. Total passenger car production, however, including that of Ford was nearly 5 per cent ahead of last year's first quarter.

As a whole there can be no question that 1928 is going along better than did 1927 and that the second quarter will continue to show similar favorable aspects. Ford is gradually getting into larger and larger production, as is generally known, but had not reached a sufficiently large volume at the end of March to come anywhere near meeting the accumulated or even the current demand for his products. Consequently, a better picture of the general progress of the industry is available for the moment from a consideration of performance of N.A.C.C. members with Ford excluded than from discussion of total 1928 figures as compared to 1927 totals.

On this basis the sound foundation on which current optimism is based is revealed by that fact that first quarter passenger car production this year exceeded that of last by something like 26 per cent, while truck output for the same period was 19 per cent in excess of last year's three months. Retail sales of cars built by N.A.C.C. members show appreciable gain, though actual figures are not yet available.

Atlanta Ford Opens

ATLANTA, April 10—The Atlanta branch of the Ford Motor Co. resumed operations last week after an idleness of more than a year, and is now producing the new model Fords on a capacity basis of about 150 completed cars daily. Nearly 1000 workers are employed.

The plant has been remodeled and new equipment installed for production of the new model. This branch serves the Georgia territory, and parts of Alabama, Tennessee and North Carolina. I. B. Groves is branch manager.

Would Investigate Instalment Buyers

Mellon's Suggestion to Finance
Firms Supplemented by
Williams

NEW YORK, April 17—In granting relief to the National Association of Finance Companies, by allowing more time in which to file claims for the recovery of unpaid-for cars confiscated by prohibition enforcement agents, Secretary Mellon made the suggestion that the financing companies investigate not only the financial standing of the instalment-plan purchaser, but his general reputation as a citizen as well.

This investigation, in the belief of G. M. Williams, president of the Marmion Motor Car Co., should be made even more general than Mr. Mellon intimated, nor should it be confined merely to the prospective buyer's possibilities of turning bootlegger.

"The deferred payment plan," said Mr. Williams, "has many advantages, and a liberal extension of credit has, without doubt, stimulated the automobile industry and done much to distribute production equally over the year. It has kept factories humming and has made possible the ownership of cars in many families where purchase on a cash basis would have been out of the question.

"The finance companies, however, have themselves at least partly to blame if cars sold on credit fall into the hands of irresponsible persons, especially those addicted to smuggling and liable at any time to have their automobiles seized by dry agents. Such seizures, while unfair in a way to the man who holds the paper, could easily be minimized if more attention were paid to the purchaser's moral character than to his financial rating.

"I believe also that we would take a long step toward accident prevention if some of the finance companies were a little more particular as to the qualifications of those whose promissory notes they accepted.

Character of Buyer Important

"It may be important from their standpoint to keep automobiles out of the hands of potential rum-runners, but it is important from a standpoint of public policy to keep them out of the hands of morons, chronic alcoholics, physical and mental defectives, speed fiends and habitually reckless drivers.

"Perhaps 90 per cent of all our highway accidents, with their constantly mounting toll of human life and property loss, are caused by this lunatic

(Turn to page 21, please)

The Way It Started

I CAN drive a Cadillac from Detroit to Dayton faster than I could make the same distance in a Rolls-Royce," said C. F. Kettering, chief of the General Motors Research Corp. and one of the foremost automotive engineers in the world. It was at a gathering of automobile men in London last fall during the Olympia Salon, the major English automobile show.

At an automotive dinner the following day, the subject came up again and, as F. E. Moskovics, president of the Stutz Motor Car Co., was the only American present, others present endeavored to get him to champion Mr. Kettering's contention and to support the contention with a wager.

"I am interested in only one American car, and if you will let me back a Stutz against a Rolls, I will do it," was Mr. Moskovics' answer.

G. T. Weymann, of Paris, France, originator and builder of the Weymann flexible bodies, then countered with:

"I'll do it, too, if you'll let me run my Hispano-Suiza against your Stutz."

"And I'll do that if the race is for 24 hours on the Indianapolis Motor Speedway, which approximates actual road conditions more nearly than any other speedway in the world," Mr. Moskovics came back. "That will be a test worth while."



C. F. Kettering
—who started the ball arollin'

And so it was agreed and a few weeks later appearance forfeits of \$5,000 were posted in an Indianapolis bank by both sponsors.

News of the unusual wager spread throughout London immediately and soon reached the ears of Mr. Kettering, who, on the following day, greeted Mr. Moskovics with this observation:

"To prove that a Cadillac can beat a Rolls-Royce from Detroit to Dayton, you bet \$25,000 that a Stutz can beat a Hispano in a 24-hour race on the Indianapolis Speedway. Very logical."

F. E. Moskovics
—who worked out the details

And that, dear brethren, was the origin of the \$25,000 match race between a French-made Hispano-Suiza and an American-built Stutz Black Hawk, scheduled for the Indianapolis Speedway on April 16.

American Bosch Busy

NEW YORK, April 7—American Bosch Magneto Corp. has reelected all retiring directors and officers.

Business outlook for the corporation is said to be the best it has been in five years with certain departments working three eight-hour shifts daily in order to handle orders.

Studebaker Earnings Up

NEW YORK, April 7—Studebaker Corp earnings for the first quarter

of this year are estimated by A. R. Erskine, president, at about \$4,000,000, or slightly more than \$2 a share, on common stock. This compares with \$3,402,000, or \$1.74 a share, for the first quarter of 1927.

Laird Forms Company

SANDUSKY, OHIO, April 7—Cecil W. Laird has resigned as manager of the Towell Cadillac Co.'s branch and has organized the Laird Motor Co. to represent Oldsmobile exclusively.

Hoffman Urges High Speed Roads

Says Super Highways Would
Do Much to Prevent
Accidents

SOUTH BEND, IND., April 6—Highways designed and built for the fast cars of today will do more to prevent accidents and promote safety than obsolete speed limits which are neither possible nor desirable to enforce, according to Paul G. Hoffman, vice-president of the Studebaker Corp. of America.

"Sensible legislation and enforcement will help make motor roads safe for higher speeds, but to achieve the ultimate, America must build a network of specially constructed high speed roadways. For the past several years there has been a great deal of discussion about super-highways and specially constructed toll roads, perhaps built by private capital, on which speeds over 60 m.p.h. would be safe.

"It is time to stop talking and get busy on the actual construction of these roads. They are no longer deemed visionary by highway engineers.

"Detroit and Wayne County, Michigan, have led the way in the development of wide roads of the super-highway type. There is a toll road on Long Island where motorists may travel in safety as fast as their cars will carry them.

"The outstanding example of the modern high speed super-highway demanded by present-day conditions is found in Italy. The Autostrada, connecting Milan with nearby centers, is giving a spectacular demonstration of the safety of high speeds on properly constructed highways. There is no speed limit on this system of travel lanes, no grade crossings, and pedestrians are barred by strong fences.

"The Autostrada is safe for high speeds because the elements that make high speed dangerous have been eliminated. Speed in itself is not dangerous, but in connection with blind intersections, sharp turns, steep grades and possible conflict with other traffic, fast driving may be reckless driving and must be recognized as such. Take away the causes of danger—straighten the sharp turns, ease the grades, prevent cross traffic, keep out pedestrians, separate grade crossings, and you have a highway as safe as any specially constructed speedway."

Gilbert Heads K.C. Group

KANSAS CITY, April 11—The Automotive Trades Association has in-

stalled the following officers: Orville Gilbert, president; Jesse Buster, vice-president; Valentine E. Mott, secretary; James Skidmore, treasurer; John Taylor, sergeant-at-arms; Orville Gault, executive secretary.

GM Coach Salesmen Hold Meeting at Truck Plant

PONTIAC, April 10—The 30 coach salesmen from various parts of the United States, of the General Motors Truck Corp., recently held a four-day convention at the factory. A feature of the meeting was a banquet at Hotel Roosevelt, which was addressed by C. F. Kettoring, president of the General Motors Research Division. The meetings are being presided over by H. E. Listman, vice-president in charge of coach sales. Addresses have been given by Paul W. Seiler, president, and J. A. Ritchie, chairman of the board.

Takes on Studebaker

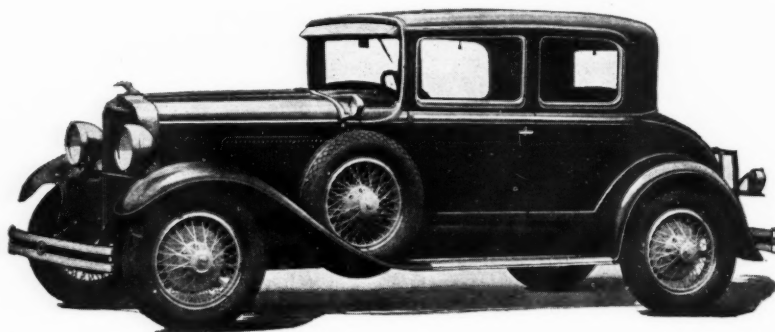
JACKSON, MISS., April 11—Announcement has been made by the Studebaker Corp. of America of the appointment of the S. B. W. Motor Co. as distributor for this territory. The S. B. W. Motor Co. was formerly local Oakland distributor.

Marmon Distributor

DENVER, April 9—Western Motors, Inc., one of the largest automobile merchants in Colorado, has been named Marmon distributor for Denver and surrounding territory, according to the announcement by John Tainsh, sales manager of the Marmon Motor Car Co.

Operations were started immediately and Western Motors held an elaborate opening in its new building.

An Exponent of Style



STYLE is the element of greatest sales value to the automobile manufacturer today, according to officials of the Peerless Motor Car Corp. And surely the Six-91 Victoria is an excellent example of advanced automobile style as produced by that company. Interior and exterior appointments of the car are fully up to the Peerless standard

Hatch Vice-President of Washington Group

SPOKANE, WASH., April 10—M. O. Hatch of Hatch Motor Co., Chrysler distributor, has been named vice-president of the Washington Automotive Association, a dealer organization. He succeeds James Whitelaw, also of Spokane, manager of Wells Chevrolet Co.

Ky., N. H. and Vt. to Get Aid in Rebuilding Roads

WASHINGTON, April 6—The senate agricultural supply bill, carrying a total of \$138,000,000, was favorably acted upon by the senate this week. The bill passed the upper house without a record vote. Two amendments were inserted during the debate on the floor, one providing \$2,650,000 to aid Vermont and New Hampshire rebuilding of roads destroyed in the last flood, and the other providing \$1,889,994 for Kentucky to rebuild its roads destroyed by flood in the spring of 1927.

100 Per Cent Stock Div.

NEW YORK, April 10—Vacuum Oil Co. has increased its authorized capital stock from \$70,000,000 to \$175,000,000, making it possible to distribute the 100 per cent stock dividend determined upon some time ago. Net profit for 1927 after depreciation and taxes was \$25,559,899 comparing with \$24,133,655 in 1926.

Handles Chandler

DENVER, April 6—Burnett & Bradshaw is the new Chandler distributor for Colorado and Wyoming. The partners were dealers for the General Motors lines at Harrisburg, Ill.

Traffic Jam Cure Urged by Mooney

GM Export Head Suggests a
Series of One-Way
Boulevards

NEW YORK, April 3—Super-highway systems carrying one-way traffic and separating commercial and passenger cars are regarded by J. D. Mooney, president of General Motors Export Co., as one of the remedies which will be applied to the present traffic jam which is affecting not only this country but the whole world.

Another remedy which is already being applied in certain European countries, Mr. Mooney describes as the "week-end plan," whereby numbers of persons who motor for pleasure take their half holiday in the middle of the week instead of on Saturday, thus avoiding much of the week-end congestion.

The super-highway system Mr. Mooney regards as the best cure for this "highway arterio-sclerosis." By the super-highway, he conceives a system of one-way boulevards running to and from all important centers, separating heavy commercial traffic from light car traffic and avoiding all grade crossings. Such a system, he says, is already in process of formation, pointing to Detroit's extension of Woodward Ave. to Pontiac, Mich., and to the work which is in progress in Wilmington, Del.

American Lancia Plant Soon to Get Under Way

NEW YORK, April 6—A. Flocker, treasurer of Lancia Motor Sales Corp., left recently for a business trip to Europe. He will spend a few weeks in France and proceed thence to the home office of the Lancia company at Turin, Italy. He will return to this country about July 1, at which time it is expected that the recently purchased plant at Poughkeepsie will be ready to go into production, making Lancia cars with imported motors and the rest of the car of domestic manufacture.

Troy Motors Changes Name

LOS ANGELES, April 10—The name of the Troy Motor Sales Co., Nash distributor for southern California and Arizona, has been changed to the Nash-Breyer Motor Co., Robert S. Breyer, president and general manager, having purchased the controlling interest in the company. The firm is one of the largest in the West.



By Lewis C. Dibble

HERE'S food for thought that may predicate a new trend in automobile merchandising. Instead of shipping cars by freight or hiring them driven overland the DeBrown Auto Sales Co. several days ago took 105 buyers of Studebaker and Erskine cars from Iowa and Nebraska to South Bend by train. After inspecting the factory each member of the party drove his own car home. Besides saving from \$60 to \$75 each, the trip also created much good will and the DeBrown company plans to repeat the idea soon.

* * * *

EVERYONE in the automobile business has eyes trained on Toledo. They are awaiting with a great deal of interest the introduction of the new Whippet Six, which, according to John N. Willys, will be the lowest priced six on the market today.

* * * *

MYLES BRADLEY of General Motors has been admitted to membership in the G.O.F.P.O.P. and Bill Ellis, of Continental, is eligible to membership. If you're in ignorance, the G.O.F.P.O.P. stands for the Guild of Former Pipe Organ Pumpers and its membership comprises some of America's foremost citizens who used to get their exercise Sundays, when a boy, by exercising the handle of the pipe organ in the old home-town church.

* * * *

NOW that W. C. Durant has dropped the name of the Star car there is only one celestial car left. It's Stewart McDonald's New Moon.

* * * *

WORD comes from St. Louis that Harry Ford has resigned as director of publicity for the Moon Motor Car Co. We don't know what Harry's future plans are, but we anticipate that some organization will soon be making use of his experience in the automobile sales promotion field.

KEEPING the wheels turning in the Falcon factory at Elyria is the newest job of R. C. Reichel. When Falcon Motors Corp. was organized last year, R. C. was selected for the job of director of service. He made such a success of it that now he has been promoted to assistant to the president in charge of the factory.

* * * *

HERE'S a hunch for Capt. William Sparks of Sparton fame. Some time ago he startled the industry by bringing out a horn that sounds like a bugle. Now it is suggested that if the wily Captain can make a horn that'll play like Scotch bagpipes it ought to be a great aid to motorists in getting out of "tight" places.

* * * *

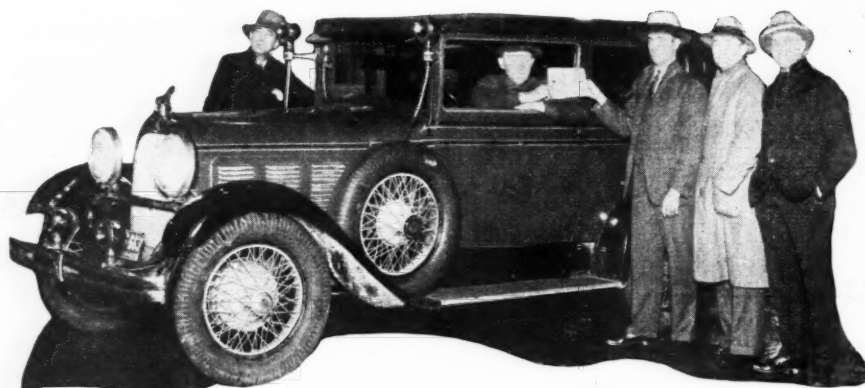
BACK in the days when motorists wore linen dusters and goggles W. B. Wardle was just getting started with the old Welch-Detroit company. In the years that have intervened W. B. has been plugging along with General Motors as assistant comptroller and now that he has been made comptroller of Cadillac-La Salle his many friends are showering him with hearty congratulations.

* * * *

DON HOGATE has packed his bullet-proof vest among the moth balls and is now writing bullet-proof copy about Dodge Brothers for George Harrison Phelps. Don came to Detroit recently from Chicago where the Tribune kept him continually busy writing news bullet-ins about the little bullet parties staged by Chicago's distinguished citizens.

* * * *

THE newspapers say that Henry Ford has bought an old hearse to add to his antique collection. But you can bet Mr. John Public will not be dying for a ride in it like he was for one in the first new Ford.



A Pair of Record Breakers

CANNONBALL BAKER being checked out of Washington, D. C., by a Western Union representative at 1.30 a.m., March 27, at the start of his record-breaking trans-continental speed run in a Falcon-Knight Six coach. Just 73 hours and 47 minutes later the Falcon-Knight glided into Los Angeles, Calif., clipping 6 hours and 8 minutes off the former record

Marylanders Ask Vote on Gas Tax

BALTIMORE, MD., April 8—The trade in Baltimore is much interested in a fight being waged to permit the voters to pass upon a 1½-cent gasoline tax imposed by the last session of the General Assembly for the purpose of raising funds for lateral roads in the counties of the state. The legal battle on the subject is to get under way in the circuit court of Anne Arundel County, at Annapolis, on April 17. Opposition to the tax is particularly strong in Baltimore.

The fight is in the form of a petition for a writ of mandamus to compel the secretary of state to put the subject on the ballot at the election next November. Under the law of Maryland a petition to have a subject placed on the ballot must be signed by 10,000 persons. In this case more than 11,000 signatures were obtained. It was held by the attorney general of the state that act was one under which an appropriation was made and therefore did not come under the referendum provision.

Holds Spring Exhibit

NEW YORK, April 9—Packard Motor Car Co. of New York will stage a spring exhibit of open car designs, beginning today and continuing until April 19, commemorating its twenty-fifth anniversary. Simultaneously there will be showings of new spring open models in all the Packard branches and agencies in the New York district, including the Newark branch.

Some idea of the development of the

New York Packard company may be gained when it is considered that in 1903 its sales amounted to 48, while it is expected that in 1928 they will amount to 9330.

Durant Breaks Another Monthly Output Record

NEW YORK, April 12—Durant Motors, Inc., built 9661 cars at its Elizabeth plant during March, which exceeds the previous record established in May, 1923, by 1661 cars.

141 Orders in 10 Days

ST. LOUIS, MO., April 6—Fifty-two Oldsmobile dealers in the St. Louis territory, reporting on the progress of a special demonstration campaign begun in March, revealed that 1244 demonstrations were given, that 141 orders were taken and 68 deliveries of cars made the first 10 days of the campaign.

Largest All-Metal Monoplane Tested

Beardmore "Inflexible" Completes Most Successful Trial Trip

LONDON, April 5—The Beardmore "Inflexible," the largest all-metal monoplane in the world, and a bold experiment in the construction of giant aircraft, recently made its first flight in England with complete success. Although it can hold at least 20 passengers, only the pilot and one mechanic, each wearing parachutes, were allowed on the first flight.

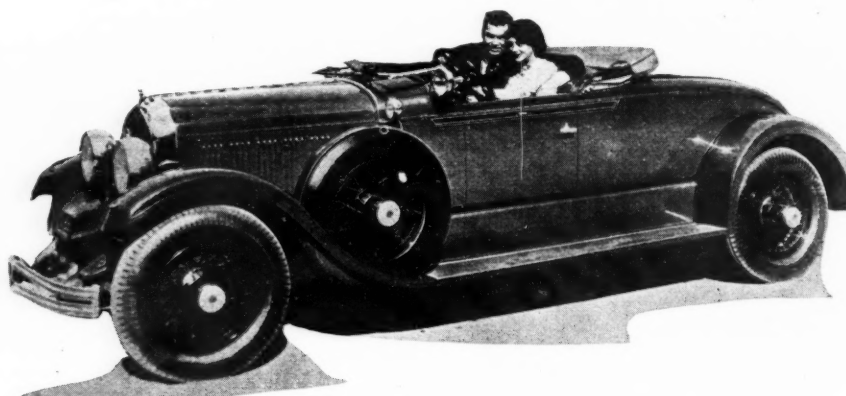
With its wing span of 150 ft., supporting in the air a weight of over 15 tons, two standard Royal Air Force fighters could comfortably nestle under each wing. Its landing wheels alone stand 7 ft. 6 in. high. Even the tail fin and rudder rises practically unsupported more than 12 ft. above the fuselage, which with the tail wheel on the ground, is itself some 6 ft. above the earth. The stout rectangular fuselage in the cabin section is about 12 ft. deep. So big is the "Inflexible" that even the large hangars of the Martlesham Heath can only contain the machine sideways.

The three engines are Rolls-Royce Condors of 650 hp. each, one mounted in the nose and one on each side.

In a run of just under a quarter of a mile the plane lifted easily and climbed steadily. None but the most gentle of maneuvers was attempted.

New House Organ

DETROIT, April 7—Falcon Motors Corp. has brought out a new house organ which will be known as the Falcon.



Ace, Queen and Jack

JACK DEMPSEY may have given many fine gifts to Estelle, his wife, but we'll bet she likes this Chrysler Imperial "20" as well as any of them

Seventy-Five Years Behind the Times

Present Car Merchandising
Methods Decried by
Banker

NEW YORK, April 9—Too many automobile buyers are buying trade-in allowances rather than cars, according to the Excelsior Savings Bank, which serves automobile row, and which has made a study of automobile buying habits in the district. This shopping around for allowances is as bad for the customer as for the industry and automobile merchandising can never be on a thoroughly sound basis as long as the habit persists, say bank executives.

"Since 85 per cent of new cars sold involve a trade-in, the danger of buying on an unsound basis is very high," declares Reginald Roome, president of the savings bank. "It is conservative to estimate that fully 50 per cent of car owners who go to buy a new car become more interested in the allowance they will get for their old car than in the question whether the new one is just what they need. Very often this is the point they most stress in the buying discussion. Excelsior depositors who are employed in the sales floors confirm this observation and out that too often all the helpful demonstration of the mechanics, appearance or service of the car is entirely lost on such customers.

Car An Investment

"The result of buying on this basis is that the buyer too frequently finds that the new car is not exactly the one which is adapted to his needs. The buying of a car is an investment and should be treated as such. The first step should be a definite setting of limits as to the price class; then the size should be decided, keeping in mind the use to which it is to be put, the size of the family, the amount available for upkeep. The next step should be the careful investigation of every car in the class, reading all the advertisements and listening carefully to all the sales points, but keeping an open mind. The very last consideration should be the trade-in allowance.

"The automobile industry is being constantly undermined by this problem. Under pressure of competition, the list prices of new cars becomes merely nominal and only the beginning of haggling. Profits under such conditions are uncertain and the investment in automobile merchandising is too great to make such uncertainty comfortable.

Joe Fewsmith Says It's This Way in Korea

Joe Fewsmith, of Sweeney & James, Cleveland, has a friend who returned recently from Korea. Joe's friend says the traffic regulations over there are printed both in Japanese and English. Following is a faithful transcription of the English version:

1. At the rise of the hand of the policeman, stop rapidly. Do not pass him or otherwise disrespect him.
2. When a passenger of the foot hove in sight tootle the horn trumpet to him melodiously at first. If he still obstacles your passage tootle with vigor and express by word of mouth the warning, "Hi; Hi!"
3. Beware of the wandering horse that he shall not take fright as you pass him. Do not explosion the exhaust pipe. Go soothingly by him, or stop by the roadside till he pass away.
4. Give big space to the festive dog that make sport in the roadway. Avoid entanglement with your wheel spoke.
5. Go soothingly on the grease mud as there lurk the skid demon.
6. Press the brake of the foot as you roll around the corner to save the collapse and the tie-up.

Automobile merchandising is about 75 years behind the times; it goes back to the days when all prices were a compromise between the fighting strength and persistence of the buyer and seller. The best thing that could happen to the automobile industry and to the automobile buyer, would be for the industry to go on a 'one-price' basis," says Mr. Roome.

Handy Named as Head of Lansing Dealer Group

LANSING, April 12—The Lansing Automobile Dealers Association has elected the following officers for the coming year: A. W. Handy, president; Harold Lorenz, vice-president; G. W. Bohnet, treasurer, and Arthur N. Avery, secretary.

The association has already made many plans to stimulate trade activities during the forthcoming year.

Visualizes Future of Transportation

Rickenbacker Predicts Many
New Developments; Sees
End of War

UNLOCKING of almost limitless resources, great increases in wealth and in individual well-being, and stronger barriers against war are seen by Capt. Eddie V. Rickenbacker in improvements to transportation which are bound to take place during the next 25 years. Mr. Rickenbacker, assistant general sales manager of the Cadillac Motor Car Co. in charge of La Salle sales, was seen in Detroit recently upon his return from a seven weeks' business trip through the West.

In less than a generation the former ace expects improvements in transportation by air, water, rail and highway far beyond the dreams of the general public of today.

Some of the features included in the picture which he paints of America in 1950 are the following:

Fifty million automobiles owned and operated in the United States.

A half dozen super-highways criss-crossing the United States with both through and local traffic.

A speed of 75 to 80 miles an hour on the through highways.

All passenger traffic moving over airways.

Air lines paralleling every railroad.

Mail, express and light freight moving through the air.

Oceanic air travel an every-day reality.

Towns of 300,000 population with six or seven airports, instead of one.

Families owning four or five autos instead of one.

City workers commuting 100 miles to work by plane and auto.

Railroad terminals roofed over for airports.

Television perfected so that the whole world sees and hears big news, sporting and entertainment events in its own home.

Regarding the future of war, Mr. Rickenbacker sees in aircraft not only the greatest weapon of war, but also the end of all war. "To the airplane there is no front," he says.

Heads St. Louis Michelin

ST LOUIS, Mo., April 7—R Victor Edell, formerly assistant manager of the Michelin Tire Co. branches at Philadelphia and Boston, was appointed manager of the St. Louis Michelin branch last week.

Studebaker Has Half-Ton Delivery

New Offering is Mounted on
Chassis of Erskine
Six

SOUTH BEND, IND., April 10—Studebaker's new ½-ton delivery car is being offered in two body styles: screen body \$795, and panel body \$820 f.o.b. factory. The car is mounted on the chassis of the New American Edition of the Erskine Six. Quick acceleration, short turning radius, easy steering, comfortable riding qualities and economy are featured.

The bodies are low-swung and the new waist panel, now so popular in passenger car bodies, is present and adds a note of distinction to the general appearance of the entire car. The driving compartment is entered through doors 27 in. wide by 44 in. high. Spanish grain leather fabric seats with tilted backs insure driving comfort. A large steering wheel with spark, gasoline and light controls on top; instruments mounted under glass in an artistic group; automatic windshield cleaner, dome light, rear vision mirror, electric horn, and other features of modern passenger cars are standard equipment. The instruments include: Speedometer, hydrostatic gasoline gage, ammeter, and oil pressure gage. A spare tire carrier and coincidental lock to steering gear and ignition are also included. Self energizing four-wheel brakes of mechanical internal expanding type are standard equipment.

The rear opening is 44 in. wide and 40 in. high and 28 in. from the ground. From the driver's seat to the rear doors the loading space is 74 in. long, 47½ in. high, and 48 in. wide, giving a total loading space of 96.5 cu. ft. of space which is ample for 1000-lb. loads.

The ruggedly built body is non-rumbling and scientific bracings prevent squeaks and rattles. The low platform is obtained by use of a special sub-frame construction. The floor is sealed from dust or moisture by "J" iron joints. The entire interior is finished in gray engine enamel.

Dana Completes Plant

TOLEDO, April 6—A factor in Toledo's automotive industry will be the new Dana Manufacturing Co., headed by Charles A. Dana, president and general manager of the Spicer Manufacturing Corp., which is just now completing a new plant 300 by 500 feet on a 30-acre site at the corner of Sylvania Ave. and Bennett Road.

Jest—a Bit Cynical

By Sherman Swift

DO these experiences that I write about really happen to me? a reader asks. Without giving a direct answer I must admit that it seems to be my fate to set out after mere prosaic kindling wood, so to speak, and to bring home, all unwittingly, armfuls of laurel.

To give a poor example of what I mean—I have much better ones—I started the other day to buy a garage for a friend who, too long bowed over a desk, must have a little wayside shop in which he can make a living and regain his health; I set upon this ordinary quest only to find out something about the modern method of paying "experienced" nurses.

There were several interesting replies to my advertisement in a Baltimore paper. One of the most promising-propositions was only a few hours' ride from Drexel Hill and we hooked up the Henry's eight and went down to look it over today, which is Sunday. (I put that in about Sunday so John Cleary will get the impression that I work outside of the office.) The proprietor of this shop proved to be an old, old man, somewhat enfeebled by recent illness. We discussed the pros and cons of the business—an axiom of trading is that you must never show interest in the thing you want to buy—and finally he asked me what I would give for the shop.

I made the usual derogatory statement relative to my lack of anything but passing interest and he again expatiated on the good living that could be made from the shop. "You nor nobody else wouldn't buy it if I had my health and stren'th," he told me. "But come of layin' up sick and havin' a nurse that's more willin' to see me dead than alive, I ain't in my usual good health. My body's all right but my nerves has been shocked."

"First time I ever heard anyone say anything against nurses," I remarked.

He shook his head. "Listen," he said impressively, tapping his cold pipe against the heel of his calloused palm. "I know what I'm talkin' about. I want to tell you for a fact that the nurse I had—experience' they call 'em; not train'—would rather see me dead than alive. I was actually worth more as a corpse than I was as a patient, seems like."

I expressed amazement.

"You know," he continued, after a moment, "that woman give me an awful shock. When they all thought I was due to pass in my checks, what do you think she done?" I shook my head. "Well, sir, believe it or not, she had the nerve to recommen' an und'taker to my wife. Told her how this feller could lay me out to look beautiful—which was somethin' nobody couldn't do to me alive. Yes, sir. And all the time I was alistenin'. Well m' wife felt pretty bad, her talkin' that way with me as tough off as I was, but she wouldn't thought so much of it, my wife wouldn't, only late that night there came a 'phone call for the nurse. Neighbor of mine down the road a piece always listens to every call comes over the 'phone. Belongs to the fire department and is afraid maybe they'll be a fire an' he won't hear 'bout it until too late. Well, the way he tells it, seems like the call was from an und'taker. Seems like this und'taker was askin' was I dead or not. The nurse said no, but I was as good as gone. 'Well, don't forget to recommen' me,' the man says. Then the nurse tells him she's already recommen' a different und'taker. Well, this und'taker gets mad and says how-come? Seem' like he'd always got her business. So she tells him this new und'taker was offerin' bigger money. 'How much is he offerin'?' the und'taker ast her and she tells him \$150 per corpse. Well, the upshot of it was he said he'd meet the raise. Grumbled some, but agreed."

I expressed proper sympathy. "It does seem as though she was rather shrewd," I said.

"Shrewd ain't the word," he sniffed. "I tell my wife's the first time I ever knew nurses was paid on a salary an' commission basis."

Reveals Secrets of Body Designs

Hupp Sales Manager Enumerates Coachwork Features

DETROIT, April 7—The effectiveness with which the design of Hupmobile's "Century" coachwork has cared for the body stresses and strains imposed by modern high compression engines, higher speeds, faster acceleration and quick-acting four-wheel brakes, was recently indicated by R. S. Cole, Hupmobile general sales manager.

"Modern transportation needs have imposed demands far more exacting on motor car bodies than the public generally realizes," said Mr. Cole. "The tremendously greater flexibility of today's better automobiles has meant almost the literal necessity of redesigning motor car bodies completely.

"Body builders universally are learning that there are nine points at which body stresses and strains focus. These nine are the upper corners where the windshield, body top and front pillars meet; the body pillars themselves; at the cowl bar; the junction of the instrument board and cowl pillar; junction of roof rails and windshield header; the junction of the dash, sill and chassis frame; junction of the front body pillars and body sill; the number and location of the junctions where the body is bolted to the chassis, and the junction of dash and body.

"Every one of these problems has been solved effectively in the Hupmobile 'Six of the Century' and 'Century Eight,' bodies.

"First of all, we believe thoroughly that the wood and steel type, generally called the composite body, results in the best coachwork. Wood and steel combines great strength with resiliency, both of them vital to any body in which long life and quiet are fundamental requirements. Automobile bodies must constantly undergo severe shocks—such as are encountered in quick stopping, fast acceleration and on bumpy roads. Modern heavy traffic has made a car of great flexibility an almost imperative necessity. A body that will withstand the strains that such flexibility imposes is almost equally as important as a chassis of similar abilities.

"It is at these nine cardinal points of greatest strain that the construction of the 'Century' bodies stands out so preeminently."

Cars Gain in Detroit

DETROIT, April 10—New passenger cars registered in Michigan showed a

gain in February compared with the corresponding month a year ago. Total registrations were 10,090 compared with 9690 in February of last year. This brings the total registrations for the first two months of 1928 to 7747, according to figures prepared by the Michigan Automotive Trade Association.

Reeves Looks for Good Business in First Half

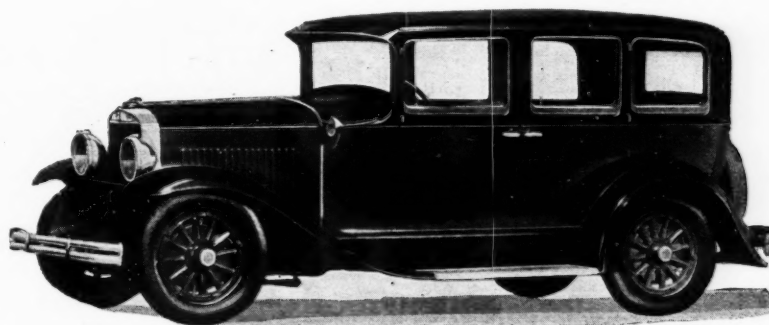
NEW YORK, April 10—Alfred Reeves, general manager of the National Automobile Chamber of Commerce, who has just returned from his annual spring tour of the industry, believes that the outlook for the first half of 1928 is exceptionally fine with no indications whatsoever of a let-up for the remainder of the year. Orders are such that all factories are now trying to step up their production to peak figures, with dealers clamoring for cars either for immediate delivery or for stock purposes in anticipation of orders to come within the next three months.

Lesen Sie Deutch?

Automobil-Reparaturen, by O. Winkler, Chief Engineer, is a German work on automobile repairs recently published by William Knapp, Halle (Saale), Germany. It deals with repairs which can be made in any machine shop having only the ordinary tools and equipment. Information on maintenance operations and temporary repairs are also included.

The volume naturally is written to cover German conditions, which differ in many respects from our own, but there is no doubt that any repairman familiar with the German language would find in it much information.

Adds Another Winner



HERE'S a worthy addition to the line of fine cars put out by the Graham-Paige organization. It's the "614" five-passenger sedan, one of the most beautiful in the series

Georgia Tire Ass'n Plans Big Membership Drive

ATLANTA, April 7—At a recent meeting of the Atlanta Tire Dealers Association at the Winecoff Hotel, plans were mapped out for the further development of the new Georgia State Tire Merchants Association, and the conducting of a state-wide campaign among tire dealers and distributors during the next few months to bring as many of them as possible into the new organization.

The state association was formed at a meeting in February at Macon, Ga., and is said to be the first state tire association to incorporate the name "Merchants" in its official title.

Reaffirms Merger Denial

NEW YORK, April 10—Ross W. Judson, president of Continental Motors Corp., has just issued a statement deploring the repeated linking of the name of his company and of himself in rumors of mergers.

"It is only natural that we, like any other corporation that builds its foundation on service, would be vitally interested in our customers and would endeavor to build up a friendly association. This does not mean that we should attempt to tell them how to run their affairs, particularly so in view of the fact that we are not financially interested with any motor car company," said Mr. Judson.

Takes on Locomobile

SAN ANTONIO, TEXAS, April 5—Orsinger Motor Co., one of the oldest distributing companies in this city, has Co. of America to distribute Locomobile signed a contract with the Locomobile line in this territory.

"Biggest Year" is Jordan's Forecast

Car Maker Gives Four Reasons
Why 1928 Will Break
All Records

FOUR things, working together, will make this the biggest year the automobile industry has ever seen, according to Edward S. Jordan, president of the Jordan Motor Car Co.

First—The greatly increased use of motor cars by the present owners who cannot possibly get along from day to day without them, will hasten the necessity for replacement. The replacement business already runs well into the millions.

Second—The constantly increasing pressure on the part of individual members of families for individual transportation. A few years ago, one car to a family was considered a luxury. Now two cars to a family are fast becoming the rule—and three, four or five cars are no longer a novelty.

Third—The farmer, who has been a rather negligible factor in the market for some time, is now better able to buy than he has been for years.

Fourth—Thousands of miles of good roads have been built every year, and the urge to own a car and go somewhere today is too strong to resist. Good roads have been one of the greatest factors in increasing automobile sales, and will continue to do so.

Short Haul Plane Line

MINNEAPOLIS, April 11—Aerial passenger service will begin in June between this city and Rochester, Minn., with the operation of a \$45,000 trimotor Stout airplane.

Moves Up



R. C. Reichel

MEET R. C. Reichel, folks. Mr. Reichel, despite his obvious youth, has been made assistant to the president of Falcon Motors Co. Good luck!

Horses Lose in N. H.; Cars and Mules Gain

CONCORD, N. H., April 10—A survey of horses and automobiles in New Hampshire is interesting. First it shows that the farmers had in 1927 35,532 cars and trucks.

While the cars and trucks have been increasing the horses have been going out of the picture. In 1910 New Hampshire had 46,229 horses. Ten years later they dropped to 38,194. In the next five years they decreased some more until the figures stood at 31,457.

Mules, on the other hand, put up a big kick against being pushed out of the picture. The census shows that while in 1910 there were only 195, there were 283 in 1925.

Mellon Wants Tax Retained

Dealers and Makers, Not
Users, Seek Repeal Secre-
tary States

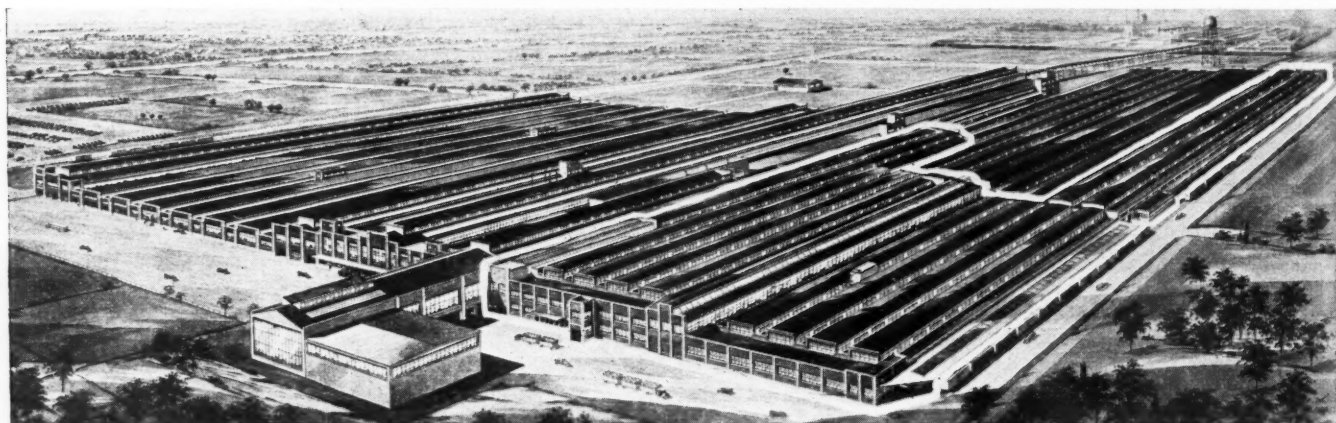
(Continued from page 9)

"That part of the secretary's statement before the committee denying that the automobile purchasers themselves have no special interest in the repeal of the tax is not based on fact," President Weeks declared. "Since its inception two years ago, our association has repeatedly gone on record with the Treasury Department and Congress insisting that it, as a wartime measure, should have been repealed when the emergency was past. The American Motorists' Association, which is in no way subsidized by the automobile manufacturer, is unequivocally opposed to a continuation of the tax."

That the manufacturer was carrying on any unethical propaganda or campaign for the repeal of tax was equally emphatically denied by Congressman Robert H. Clancy of Michigan. Mr. Clancy also declared that the surplus would be nearer \$600,000,000 than the \$400,000,000 as represented by the secretary. He declared that the Senate should repeal the automobile tax in toto and expressed a belief that the Senate, despite the administration program, would follow the House in voting the complete repeal of the automotive tax.

Goodyear Dealers Meet

PORTSMOUTH, OHIO, April 9—Goodyear dealers in Portsmouth and surrounding counties were entertained at dinner which was followed by a sales conference at the Hurth Hotel, April 3.



Eighty Acres of Oakland-Pontiac Floor Space

IN this mammoth modern plant Oaklands and Pontiacs are built. Recent factory expansion, including new assembly and addition to shipping facilities (see right of white line) opened April 2. Approximately all of the left-hand half of the factory group is devoted to Pontiac Six manufacture. Fisher body plant is shown in the right background

What's Coming In Motordom

SHOWS

Automotive Equipment Ass'n, Colliseum, ChicagoOct. 22-27
 •ChicagoJan. 26-Feb. 2
 National Standard Parts Association, Cleveland Auditorium...Oct. 29-Nov. 3
 •New YorkJan. 5-12
 •Will have special shop equipment exhibit.

CONVENTIONS

Automotive Engine Rebuilders Association, Coronado Hotel, St. Louis, June 11-14
 Automotive Equipment Association, Grand Hotel, Mackinac Island, June 10-16
 Automotive Equipment Ass'n, Coliseum, ChicagoOct. 22-27
 National Standard Parts Association, Hollenden Hotel, Cleveland, Oct. 29-Nov. 3
 New Jersey Automotive Trade Ass'n, ElizabethMay 8

Society of Automotive Engineers, Chateau Frontenac, Quebec...June 26-29
 Texas Automotive Dealers Association, Gunter Hotel, San Antonio...April 16-17
 Utah Automobile Dealers Association, Salt Lake CityMay 16

RACES

AltoonaJune 16
 Atlantic City, N. J.May 5
 DetroitJune 3
 Indianapolis, Hispano-Suiza and Stutz, April 16
 IndianapolisMay 30

June 10—A. E. A. Summer Meeting Number, Motor World Wholesale

June 23—Engineering Issue—Automotive Industries

Baldwin Removes Rubber Restrictions

NEW YORK, April 7—All restrictions on export of rubber from British Malaya and Ceylon imposed by the Stevenson Act will be removed Nov. 1, it was announced last week by Premier Baldwin in the British House of Commons. In view of the failure of the restrictions to maintain prices at about the 40 cent level, the removal has been expected, particularly since the appointment by the the Premier of a committee to investigate the rubber situation.

Though removal of the restrictions had been discounted, the announcement caused a selling wave on the Rubber Exchange which broke all trading records and resulted in a maximum decline of nearly 6½ cents a pound. As a result of the liquidations here and in London, holders of rubber stocks, estimated at 250,000 to 275,000 tons, have lost heavily.

The American Rubber Pool, which is understood to hold between 35,000 and 40,000 tons purchased at 41 cents, plus warehouse, interest and other charges, is said to face a paper loss of about 50 per cent on its holdings or approximately \$19,000,000.

Dickson Heads Detroit Car Dealer Association

DETROIT, April 10—At the annual dinner meeting held at General Motors Building Monday night the Detroit Automobile Dealers Association elected the following officers for the coming year: James Dickson, Jr., manager, Buick Motor Co. branch, president; Bruce R. Dodds, Hall Dodds Co., Ford dealer, vice-president; H. K. (Dick) Chambers, Chambers Motor Sales, sec-

retary (re-elected), and Charles Abbott, Vanguard Motor Sales, Hupmobile dealer, treasurer.

The following, in addition to the officers were elected directors: J. A. Schulte, manager, Cadillac Motor Car Co. branch; Tom Walker, Walker Motor Sales, Hudson-Essex dealer and John Evans, John H. Thompson Co., Chrysler distributor.

Would Investigate Instalment Buyers

(Continued from page 13)
 fringe'—so to speak—of motordom.

"Only a very small percentage of motorists fall into this class, but even with an irresponsible group of one per cent makes a formidable total when the 23,000,000 automobile registrations in America are taken into consideration. Untold damage can be done by 230,000 reckless, insolent, half-witted or physically defective drivers.

"It is indeed a short-sighted policy on our part to insist on selling cars to those incompetent to drive them, for these incompetents are a constant menace to the highways and discourage the more responsible motorist from taking out his car. And motoring should be made a pleasure rather than a hazard.

"In states requiring no competency tests, almost anybody is allowed to pilot a car.

"It is not for any of us to criticize the finance companies which have proved so beneficial to the automobile industry, but I, for one, would like to supplement Secretary Mellon's suggestion to this effect, that the physical, moral and mental responsibility of the deferred-payment-plan purchaser be more rigidly investigated, and that the initial payments on cars be substantial enough to warrant a sense of ownership on the part of the buyer."

Million More Cars Registered in '27

WASHINGTON, April 11—A total of 23,127,315 motor vehicles were registered in the 48 states and the District of Columbia during 1927, representing an increase of 1,125,922, or 5 per cent, over 1926, according to statistics just announced by the U. S. Bureau of Public Roads.

The Department advises that, using the population estimate as of July 1, 1927, that there was one motor vehicle for every 5.13 persons as of that date.

The total registration of 23,127,315 was composed of 20,230,429 passenger cars, and 2,896,886 motor trucks and road tractors.

States with a registration increase of 10 per cent or more are North Carolina, South Carolina, Utah and Arizona. States with a numerical increase of over 50,000 are New York, California, Ohio, Illinois, Texas and New Jersey.

As in other recent years, motor vehicle registration receipts constituted a substantial contribution to funds for road construction. The total receipts from registration fees and licenses amounted to \$301,061,132. These funds were allocated as follows: Collection and administration \$14,876,410; state highways, \$189,985,289; local roads, \$53,577,893; payments on state and county road bonds, \$38,087,598; and for miscellaneous purposes, \$4,533,942.

Indianapolis Track Will Have 18-Hole Golf Course

INDIANAPOLIS, April 10—An 18-hole golf course will be constructed on the speedway property and acres forming the grounds will then be turned into a year 'round recreational center.

Gas, Oil and Hot Dogs—Drive In

There certainly is plenty of spring fever in the air. Only yesterday we saw a service station renewing the springs in three cars.

A few egg shells, some dirty paper plates, and an empty bean can by the roadside reminded us that the touring season is at hand again. And we wonder why tourists don't act in front of the other fellow's place as they would if they were eating in their own front yards.

One hundred per cent stock dividend to be distributed by Vacuum Oil Co., which is any investor's idea of a perfect Vacuum.

Well, anyhow, they are certainly driving over the roads. And the way some of them drive *should* get them sent over the road.

M. O. Hatch of Hatch Motor Co., Chrysler distributor of Spokane, named vice-president of Washington Automotive Association. This is evidence that you can't keep a

good man down, or in nautical lingo, that there's one Hatch that can't be battened down.

Willys-Overland ships 60-car trainload of automobiles to Norway and Sweden. This, we hold, is the real way of "including the Scandinavian."

A Department of Commerce survey analyzing the retail cost of selling shows that 42 per cent of the sales person's time is taken up in the actual selling of merchandise, 17 per cent in taking care of stock, and 8 per cent in interviewing prospective customers. The Department's figures leave 33 per cent of the working time unaccounted for, so we are left to suppose facetiously that in the case of female sales persons this is consumed in making up, and by male sales persons in making up to the maids.

Add modern definitions—"A pedestrian is a man whose wife is using the car."

Millions Change Plugs Each Year, reads a headline in **MOTOR AGE**. No, dear reader, this is not a throwback to the old horse days.

George T. Hook's new column, "Tunes from the House Organs," recalls that wise crack of the new plant manager who, hearing of the company's house organ for the first time, said—"Who wants music in a factory? Get rid of it."

Secretary Mellon suggests greater scrutiny of instalment buyers to minimize confiscations by prohibition enforcement agents. Another attack on a great American industry.

Automobile merchandising is 75 years behind the times, says a bank president in New York City. How much more antiquated the merchandising in other lines must be, to allow the young automobile business to climb to the top in a few years.

John Cleary Says—

Here is one to clip out and paste in the wallet:

"Though old the thought and oft expressed, 'tis his at last who says it best—I'll try my fortune with the rest.

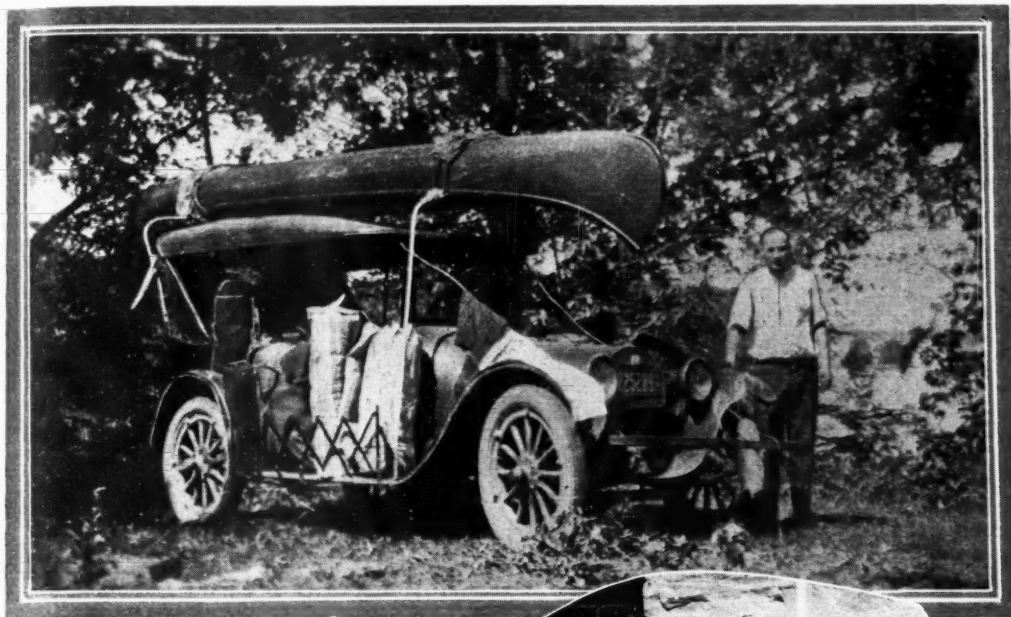
"Life is a leaf of paper white, whereon each one of us may write a line or two—and then comes night.

"Greatly begin! Though thou have time but for a line, be that sublime. Not failure, but low aim, is crime."

It was written by James Russell Lowell.

He was good, too.

Spring, Tra-la, Has Come!



The celestial scene, at left, is merely a reminder to lovers of outdoor life that it won't be long now, and to car dealers that they should capitalize on the annual urge. Something clever could be written about the land and sea craft amid the sylvan flora, but we're so full of spring fever germs that we'll have to pass up the job with a yawn

Some youngsters become presidents and others become race drivers. If an interest in automotive mechanics means anything, Eddie Packer, son of MOTOR AGE's technical editor, is headed for the track. A glance at the bench will inform you that the youngster is a MOTOR AGE addict. Eddie got spanked the other day for monkeying with his daddy's car and cleverly assumed that his daddy's name must be Eddie "Lickin" Packer. There's a fast one



A modern, departmentized electrical service station is now serving the motoring public in Falls City, Neb. Below you see it. It is that of the W. A. Erath Co.

The development of the small road bus has progressed so far in Europe that cars capable of standing up under road conditions are being produced. Above is shown a Steyr omnibus, eight-passenger, with a small engine of only 6 hp. It recently covered the distance of 3300 miles from Koenigsberg to Monte Carlo in an unbroken run, with no engine trouble experienced

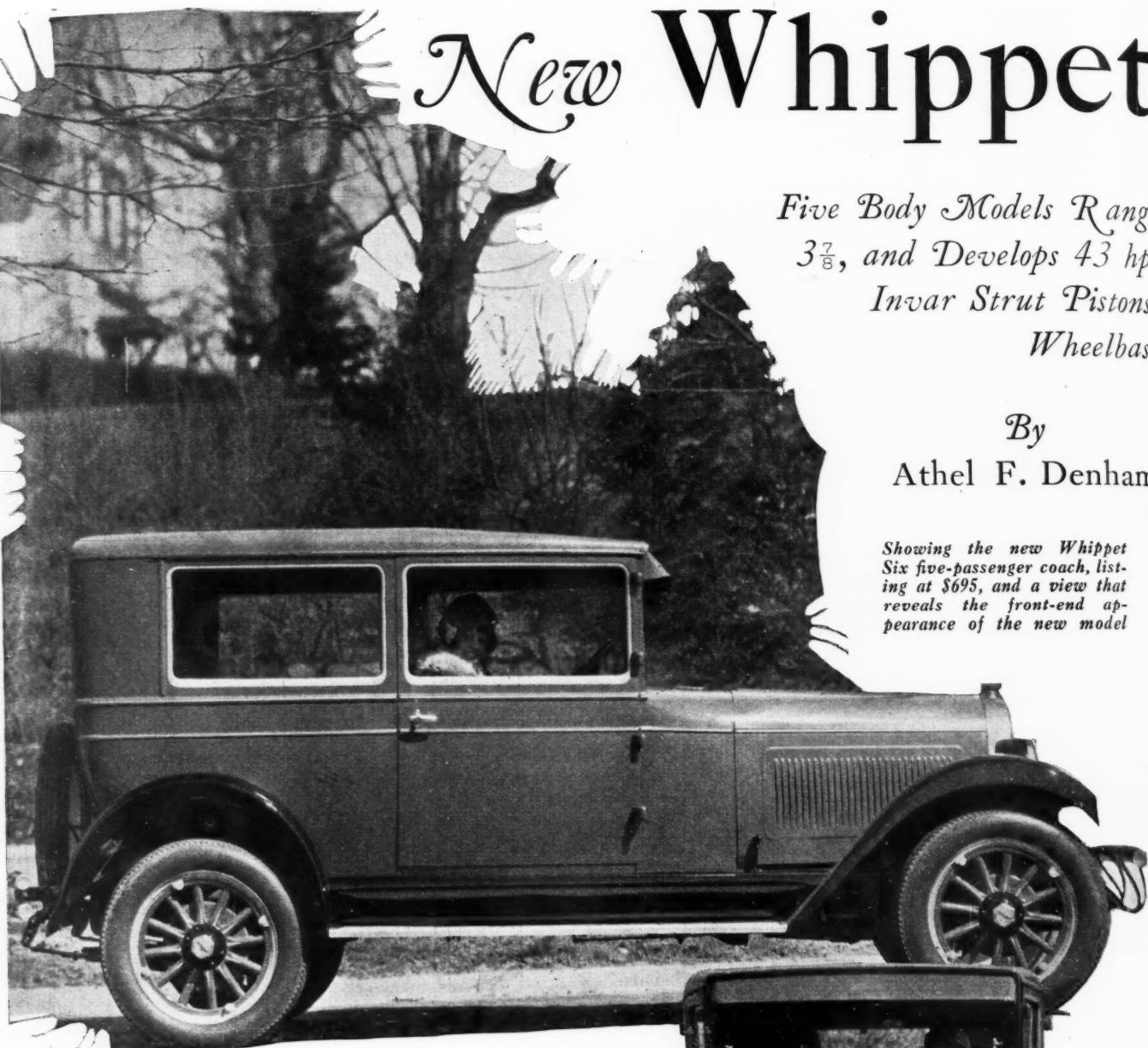


New Whippet

*Five Body Models Range
3 $\frac{7}{8}$, and Develops 43 hp.
Invar Strut Pistons,
Wheelbase*

By
Athel F. Denham

*Showing the new Whippet
Six five-passenger coach, list-
ing at \$695, and a view that
reveals the front-end ap-
pearance of the new model*



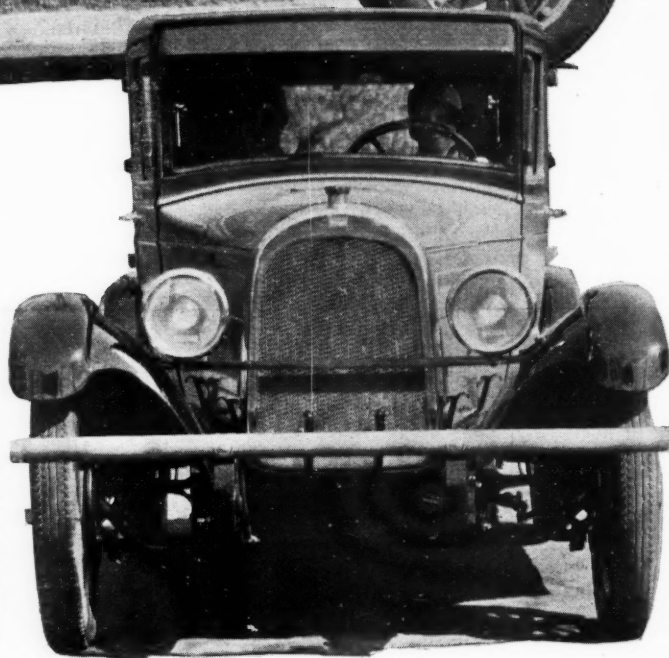
WILLYS-OVERLAND, INC., has announced the new Whippet Six, aptly called the "world's lowest priced six." In price its body models range from \$615 to \$745, the five models being individually priced as follows:

Two to four-passenger roadster, \$685; five-passenger touring, \$615; two to four-passenger coupe, \$695; five-passenger coach, \$695; four-door sedan, \$745.

In spite of this low price range the car has numerous features of mechanical design generally associated with cars in the more expensive ranges. Among these might be mentioned a seven-bearing crankshaft, full pressure lubrication to all bearings except piston pins, thermostat water control, Nelson Bohnalite invar strut pistons, adjustable timing chain and a wheelbase of 109 $\frac{1}{2}$ in.

A preannouncement story in MOTOR AGE last week stated that a stock model of the new line had established a new endurance record for 24 hr. for cars under \$1,000 on the Indianapolis Speedway by averaging 56.52 m.p.h. while it averaged 63 m.p.h. in a special 50-mile run. It is also stated that the car averaged 35.73 m.p.h. for 150 miles in second gear.

To enable such high performance the new Whippet six L-head engine has been designed with high power



output coincident with low load factors as basic guides. Bore and stroke are nearly square, being 3 $\frac{1}{8}$ by 3 $\frac{7}{8}$, corresponding to a piston displacement of 178.3 cu. in. Its tax rating is 23.4 hp., but the engine actually de-

It is Lowest Priced Six

in Price From \$615 to \$745. Engine Has Bore and Stroke of $3\frac{1}{8}$ by 109 $\frac{1}{2}$ in. Record Production Planned.

velops 43 hp. at the relatively slow speed of 2800 r.p.m. To obtain the low load factors, both crank and camshaft bearings have been made larger than usual, while compression ratio is kept down to 4.44 to 1. Upper crankcase halves are integral with the block.

In addition to the heavy seven-bearing $2\frac{1}{4}$ -in. crankshaft, connecting rods have been designed with a center-to-center length of over twice the stroke in order to keep side-wall pressure down to a minimum. The crankshaft bearings themselves have lengths of 2 in. for the front, $2\frac{7}{16}$ for the center, $2\frac{1}{2}$ in. for the rear, and $1\frac{1}{4}$ in. for all intermediate bearings. Thrust is taken by the center main bearing. The rods are $9\frac{3}{8}$ in. between centers and have $1\frac{7}{8}$ in. diameter, $1\frac{5}{16}$ in. length bearings cast centrifugally in the big end.

Piston pins, which are $51/64$ in. in diameter and $2\frac{15}{16}$ in. long, ride in bronze bushings in the upper rod end, being locked in the aluminum alloy pistons by means of $5/16$ -24 set screws. As mentioned the pistons are of Nelson Bohnalite type and manufacture. They have an overall length practically equal to the stroke, $3\frac{3}{4}$ in., and are fitted with three rings, the upper two being $\frac{1}{8}$ in. wide while the $5/32$ in. lower ring is of the oil control type, its ring groove being also drilled radially. Distance between the piston pin bosses is $1\frac{5}{16}$ in., with $3/32$ in. clearance on either side of the rod upper end.

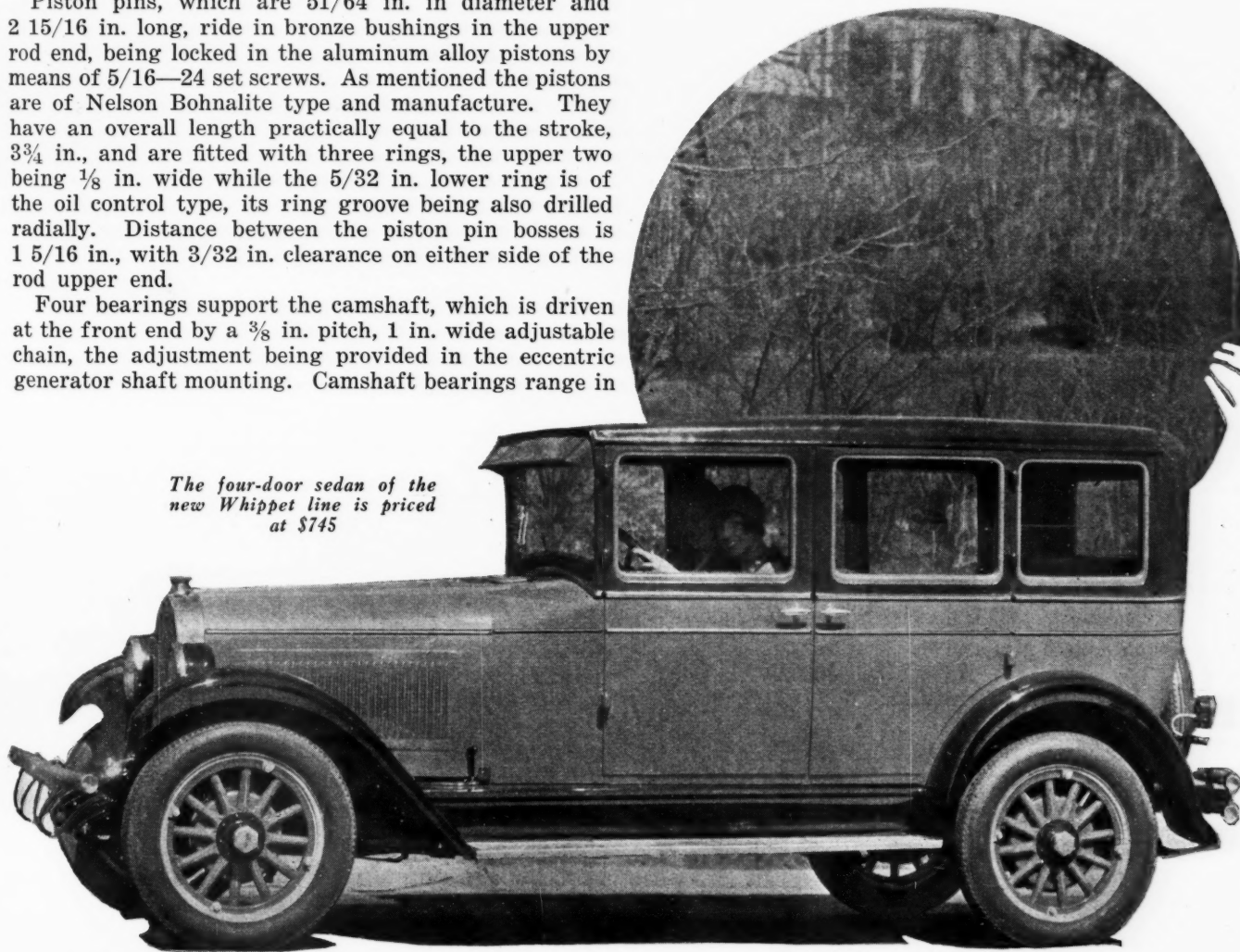
Four bearings support the camshaft, which is driven at the front end by a $\frac{3}{8}$ in. pitch, 1 in. wide adjustable chain, the adjustment being provided in the eccentric generator shaft mounting. Camshaft bearings range in

diameter from $2\frac{3}{16}$ in. at the front to $1\frac{1}{8}$ at the rear, the second and third bearings having diameters of $1\frac{59}{64}$ and $1\frac{29}{32}$ in. respectively, while bearing lengths are 1, $\frac{3}{4}$, $\frac{3}{4}$ and $1\frac{1}{4}$ in. from front to rear.

Cams have been designed to give the valves a lift of $5/16$ in. The latter have $1\frac{15}{32}$ in. diameter heads, nickel chrome being used for the intake, and silchrome or high chromium for the exhaust. They have an overall length of $6\frac{3}{64}$ in., the $.340$ in. diameter stems riding in removable guides. There is no overlap in the valve timing, intake opening 7 deg. after and exhaust closing 2 deg. before top dead center. Intake closes at 39 deg. after bottom dead center, while exhaust

(Turn to page 32, please)

The four-door sedan of the new Whippet line is priced at \$745

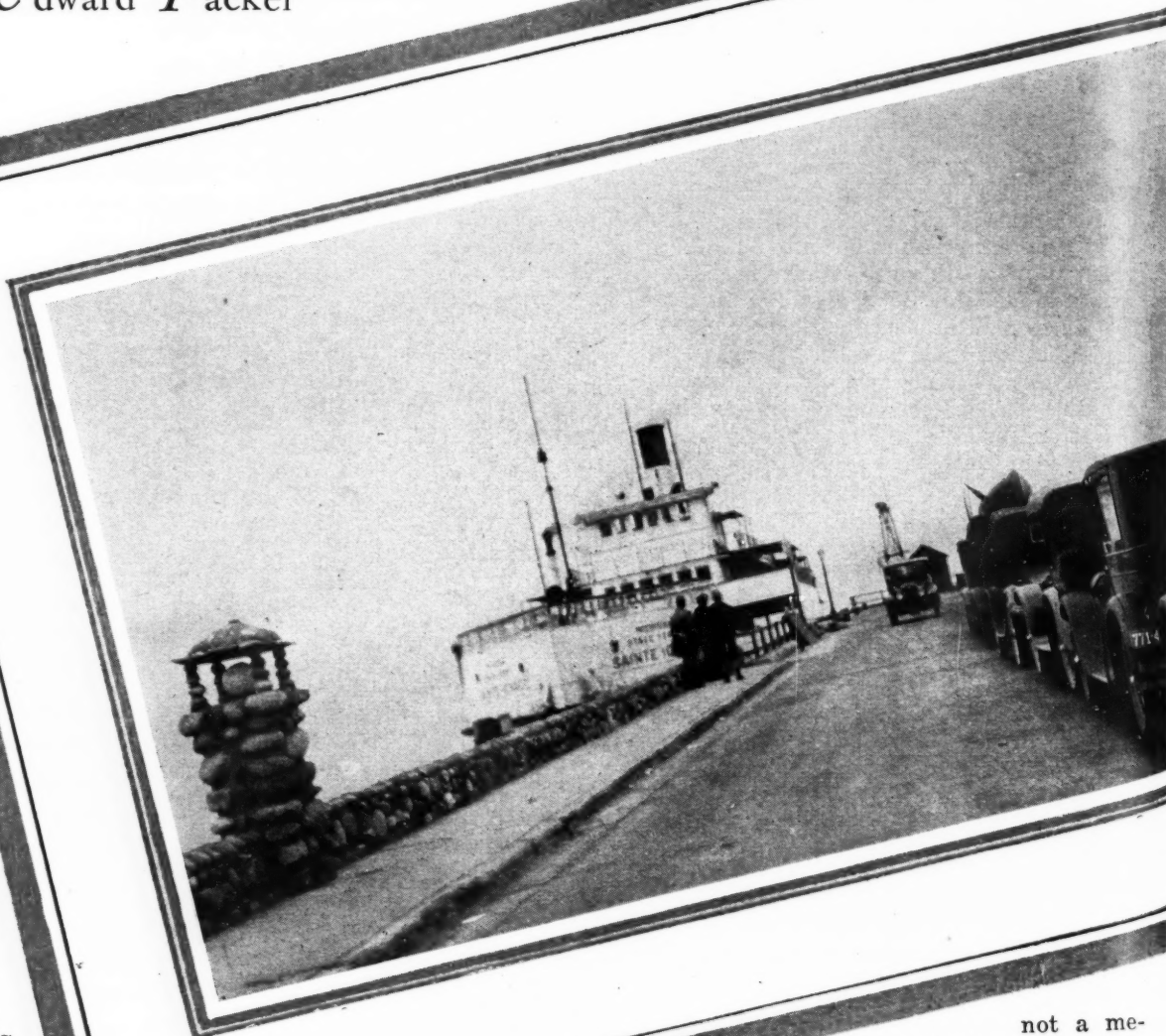


Unsold Service

*Like the Legendary Battle That Was Lost for Want of a Nail,
Many a Made Sale is Soured and Many a Potential Sale
Goes A-Glimmering for Want of Proper Maintenance
at the Right Time*

By C. Edward Packer

The car stopped with a clatter at the ferry landing and held up the line of cars



MISS PRESTON, principal of the Westville school, was interesting. Her contact with many children helped to keep her young and aside from her work the most interesting thing in the world—so far as she was concerned—was her car. Her car was more than machinery to her. It was a friend.

Bill was an old pupil of hers and was shop foreman of the Westville Garage. He serviced her car. All went well for more than a year. It was just before the long summer vacation that a little noise developed in the engine. This was strange to Miss Preston. She was

not a mechanic but she knew when all was not well.

It was like the case of the man who was not a cook—yet he knew when he had eaten a good dinner—or one not so good.

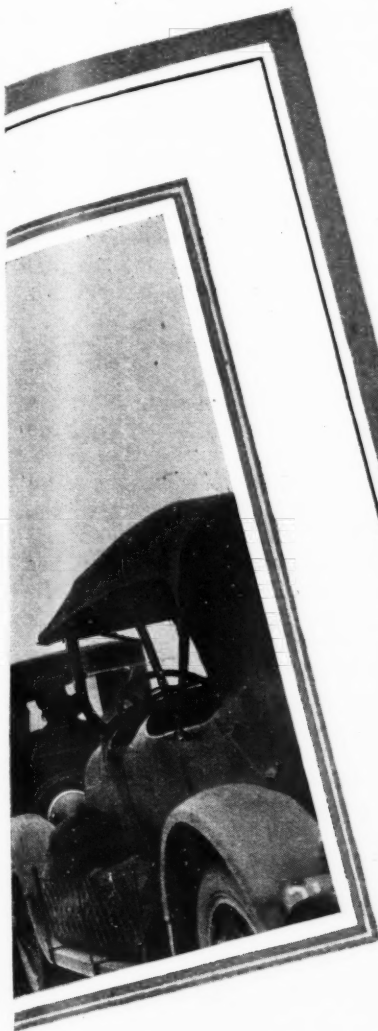
"Oh, William," she called as she drove up to the entrance of the Westville service station one Saturday morning. "I do wish you would just listen to this car."

Bill's trained ear listened intently. The engine speed was varied. First one cylinder and then another was made to run the engine.

"Guess there's nothing radically wrong," Bill finally said. "Car being about a year or so old, she's just naturally getting a little loose."

"Well, what startled me was the way this exasperating tapping noise suddenly appeared. If it were just

Unsell's Sales



POSSIBLY you have hesitated to sell a person all the service he really needed. Possibly you have feared that you would be accused of "padding" the order. But remember—you are the Service Doctor and it is your duty to prescribe that which is really needed. If you don't—well, see how it turned out with Bill when he passed up a good service operation in favor of a lesser one.

ordinary wear I should think the sounds would develop gradually. I shall go on an extended tour this summer and do not wish to take any chances."

"Nothing to worry about," Bill assured her.

"I'll just change the oil and you see if that doesn't quiet things down."

True, the new oil did make a difference, but Miss Preston felt sure that the noise was still there.

When she had an idea, it took

more than five quarts of

oil to wash it away, so she went in search of one who could "eliminate the most irritating disturbance."

There are good service stations near Westville but not all of them know the Runwell car such as Miss Preston owned.

At Summersburg, just a few miles from Westville, Miss Preston stopped. Here was an attractive service station. It was not a Runwell shop but the men were clean and busy, and they seemed to have good equipment. As Miss Preston stopped near the door the foreman stepped out. With a pleasant "good morning" he inquired as to whether he could be of service. Miss Preston asked him to listen to the engine.

"Not very bad," he assured her, "just your connecting rods a little loose. I wouldn't like to see you start on a long run without these being tightened." He quickly quoted the price for the complete job.

With a suggestion that the public library was open and only a block away he secured the job and Miss Preston seemed perfectly willing to spend four hours becoming acquainted with Summersburg and its books.

The Runwell car was similar in many ways to the one sold and serviced by the Summersburg shop. One little difference that the boys noticed was the lack of the little dippers on the lower half of the connecting rod bearings. But without further thought, to that apparently minor detail, the bearings were drawn up snug, the pan put back in place, new oil put in and the engine started. There was no noise.

It was with some pleasure that Miss Preston received her car, finished when promised, and with the little noise gone.

The last few days of school passed—possibly more quickly with the teachers than with the children.

Miss Preston was now busier with details of departure than in actually driving her car around. A last-minute check was being made with road maps.

From Westville she would run northeast to Washington. (No school teacher can pass up that city.) From Washington a good cement highway leads north and east through Baltimore and on up to Philadelphia. Here again school teachers are sure to stop.

Over the historic highway connecting Philadelphia with New York Miss Preston would soon be riding—and then the Great White Way!

North she would drive through the Adirondack Mountains to historic Lake Champlain, by boat with her car to Burlington, Vt., on the east bank of the lake, and then the beautiful drive across Vermont and into the White Mountains in New Hampshire would be in order. And so, on through Maine; a stop at Quebec, and then on down to Montreal.

Surely this would be a glorious trip. School over for two months—the car just put in good condition—nothing to worry about.

With another teacher as a companion the trip was started. The sun was shining brightly, the engine was purring sweetly, summer was just bursting into its full beauty.

Only a few miles of roads that were none too good brought them to the cement highway leading into Washington. This city was soon reached and two days later the car again swung north, making stops at Philadelphia and New York.

"Do you hear a peculiar sound in that engine?" Miss Preston asked of Miss Young, who was evidently not named for her age, but a mighty good traveling companion.

"Yes, I do, but our old car sounds much worse than that."

"Well, what bothers me is the fact that this noise is starting up again and I had it fixed less than a thousands miles ago."

(Turn to next page, please)

UNSOLD SERVICE UNSELLS SALES

The beauty of the Palisades of the Hudson and the grandeur of Bear Mountain Bridge took their thoughts from the engine to these wonders.

Mile after mile rolled by but it did not require the ear of a mechanic to notice that all was not well with the engine.

A stop for the night was made at Albany. As the trip was continued the next morning both women were agreed that the noise was much reduced—and it continued that way but only until the oil warmed up.

Joy turned to worry, and confidence in the car turned to fear. The beauty of the passing country was not seen because of the unpleasant images that were passing through the minds of driver and passenger.

The banks of Lake Champlain were finally reached.

The approach is steep. At the top of the hill leading down to the boat landing is a sign that reads "WARNING. Steep Hill. Shift into Second Gear." With some sound that would make you think that Miss Preston was not used to shifting for herself, this was done.

With steadily increasing speed they went down the hill. The car was probably doing no more than 30 miles an hour but the engine, to be exact, was doing plenty. Possibly the oil running to the front of the engine did not help matters. Maybe the extreme speed of the engine was the cause of the trouble. But whatever the immediate cause—things happened.

The tapping sound developed into a rapping noise. The rapping turned to a decided knock. The knock sounded like bursts from a machine gun. And then with a resounding crash, followed by a clatter, the car came to rest at the bottom of the hill.

"I believe something happened," Miss Preston gasped.

It would have been quite obvious to a person who was blind, deaf and dumb that plenty had happened.

"You can't stop there and hold back the line!" declared the police force at the landing as he walked over to the Preston car.

"We can't do anything else," Miss Preston began to explain. Wherewith a few deck hands pushed the car onto the ferry and the trip to Burlington was started.

The ride across the lake was not enjoyed by either of the ladies. However, they received more information in the next hour than they had received in the last year. And some of it was correct.

A tow call was phoned to the Runwell service station in Burlington. Examination of the car disclosed that a connecting rod bearing had "let go" and the rod had broken. This rod had gone through the side of the engine and at the same time had ruined the crankshaft. So suddenly did the engine stop that the rear axle was also damaged.

"Can you tell me what caused this?" Miss Preston asked.

"Sure," replied the shop foreman, "it looks as though these bearings had gone bad for want of oil—probably due to the oil passages in the crankshaft being clogged up. Then it looks as though these bearings had been pulled up too tight but had run some distance with oil splashed on them from the main bearings or other places.

"The bill for a new engine and rear axle will be considerable, but I guess we will have to go ahead."

"Wait until I get back," Miss Preston said, in a manner that would indicate to those who knew her that she had a very definite plan in mind.

Her thoughts went back to the time when the noise first developed. Want of oil had evidently caused the bearings to loosen. Bill didn't know or care enough to see why oil was not reaching the bearings. Another shop that didn't understand the Runwell system of oiling, overlooked the cause of the trouble. The cure was temporary—the results terrible.

Miss Preston's companion mentioned that when she bought her car *real service* followed it.

A telegram was exchanged with the bank in Westville and Miss Preston drove back to the Burlington Runwell agency in a different make of car.

"The man who appraised my old car an hour ago will send for it soon," she said. "When I buy an automobile I want transportation—not so much machinery. A car without intelligent *service* means nothing to me."

The oil "horse-nail story" fits well here. Here, for the want of some oil the bearing was lost; for want of the bearing the car was lost; for want of the car a sale was lost—to a competitor. And no one knows how many more cars will be sold by the Runwell competitors because of this.

All because the *right service* was not *sold* at the *right time*.

Federal's New 1½ to 2-Ton Model

A NEW 1½ to 2-ton model (A6) is being offered by the Federal Motor Truck Co. The truck is equipped with a six-cylinder, seven-bearing crankshaft, Continental engine developing 67 hp. at 2700 r.p.m. A four-speed transmission is mounted amidships, while bevel gear drive is used for the rear axle. Hydraulic four-wheel brakes are standard, supplemented by an internal expanding propeller shaft brake, with the expanding shoe mounted on the rear of the transmission case, and the drum mounted over the first metal universal.

The Continental 16C engine used in this truck has a bore and stroke of 3⅜ by 4⅝ in., giving it an S.A.E. rating of 27.34 hp. and a piston displacement of 248.25 cu. in. It is of the L-head type, with the upper crankcase half integral with the cylinder block.

Full electrical system is carried, including starter, generator, horn, head, tail and instrument board lights.

The clutch is inclosed in the bell housing and is of the single-plate type, carrying two 12-in. asbestos fabric rings. Between it and the transmission is a fabric universal joint. Location of the transmission has been worked out so that it can be quickly dropped out of the frame if necessary. To this end it is located back of the cab and is supported by four bolts from two frame cross-members, the two front bolts holding a trunnion mounting. By removing these bolts, and disconnecting the gear shift links at the front of the case, the entire assembly can be dropped. Back of the transmission are two metal universal joints.

Reduction for the bevel gear drive rear axle is 6⅜ to 1 standard, with optional ratios of 5.66 and 5.00 to 1. Straddle mounting is used for the pinion, with a double row ball bearing at the front and a single ball bearing at the rear. Differential is carried on Timken taper rollers.

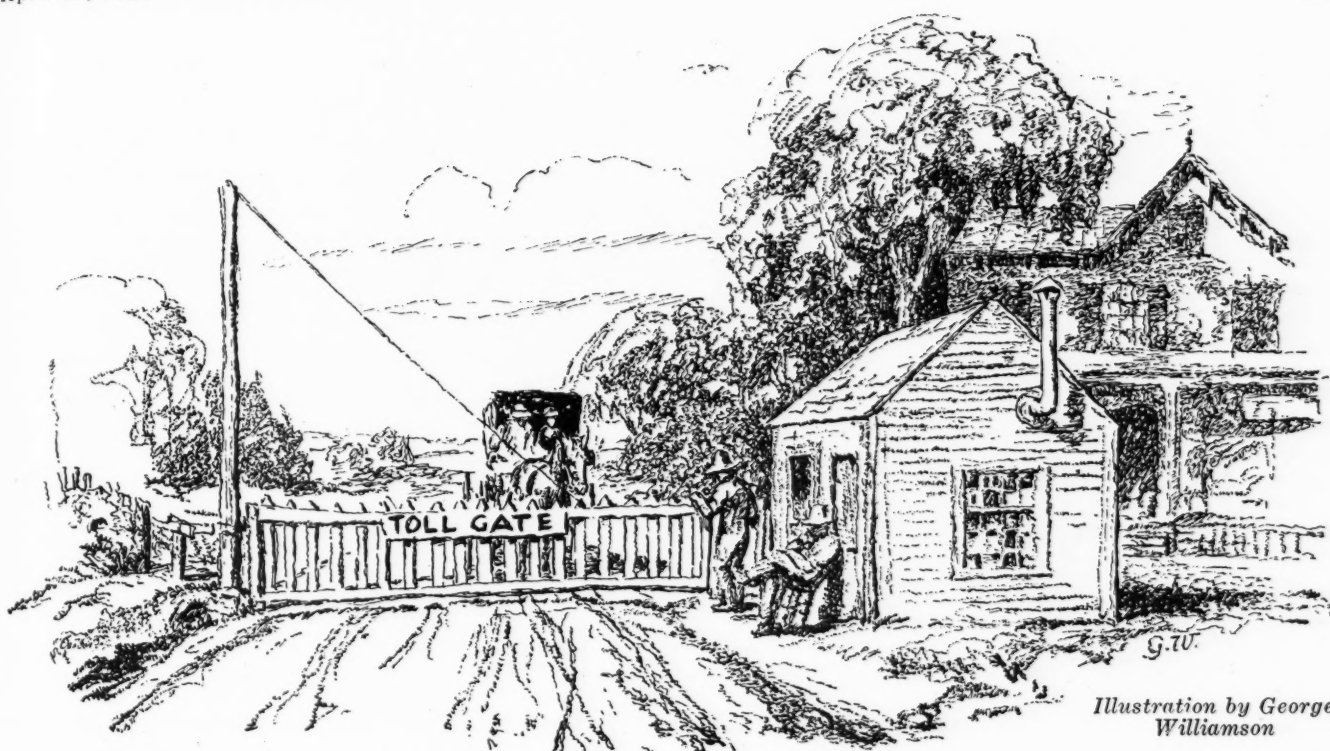


Illustration by George Williamson

Time Tolls Knell of Toll Roads

*But They Won't Stay Dead if Industry Makes No Attempt
to Combat Recent Agitation Seeking to Bring the
Idea Back to Life*

BY NORMAN G. SHIDLE

*Directing Editor, Chilton Class
Journal Publications*

TOLL roads in the United States have been going the way of the horse-car for many years. Slowly but surely the old toll roads, established back in the days before even the first horseless carriages were getting much attention, have been coming into the hands of state highway authorities and being made free to the public. This trend has had the approval of the Bureau of Roads of the Department of Agriculture, the agency which, with the cooperation of the various state highway departments, has been most potent in making possible the good roads system of our country.

While there is little likelihood of any marked change in this trend toward final complete elimination of the toll road, enough recent agitation has taken place to make necessary some real attention to the subject on the part of automotive executives, distributors and dealers. Any important recrudescence of the toll

road idea would tend to hinder general highway development, complicate the work of coordinating highway systems and impose another burden on the already constantly increasing cost of owning and operating a motor vehicle.

"To revert to toll roads would be a step backward in national progress for which there is no reason or excuse," said Alfred Reeves, general manager, National Automobile Chamber of Commerce, in a public statement recently—and in that stand Mr. Reeves seems to have the backing of most students of highway problems as well as of automotive men as a body.

A number of proposals for new toll roads, nevertheless, are being made directly or indirectly today. On the surface, some of them seem to have certain advantages from the standpoint of the car owner and of the

(Turn to page 44, please)

Stearns Builds *New* Line of Sixes

*Lower Price Range is \$2,495 to \$2,945. Six Models Offered,
Three With 126-in. Wheelbase and Three With 134-in.
Engine Develops 70 hp.*

A NEW series of six-cylinder Stearns-Knight cars to supplant the de luxe series and selling at lower prices has been announced by the Stearns-Knight Sales Corp. of Cleveland, O.

Six models comprise this line: Cabriolet roadster, \$2,495; close-coupled sedan, \$2,495; five-passenger sedan, \$2,495; five-passenger coupe, \$2,645; seven-passenger sedan, \$2,845; seven-passenger limousine, \$2,945. The

new series will be a companion line to the de luxe series of eights that appeared at the New York show in January.

A chassis of 126-in. wheelbase is used for the cabriolet roadster, close-coupled sedan and five-passenger sedan. For the other three models, a chassis of 134-in. wheelbase is used.

In external appearance the new six much resembles the eight-cylinder line. The six models are available in five color variations with three combinations of upholstery to match. The bodies have good lines and the upper back and roof sides are well rounded. Full-crown fenders are used. The headlights are bullet-shaped and heavily nickeled. The sidelights match the headlights and are

carried on brackets that enter the body for greater rigidity. A heavy nickeled band at the front of the cowl extends from fender to fender.

Interiors are roomy and richly appointed. Lights include a center dome light, two lights in rear corners, and a foot light that is turned on when the rear doors are opened. The hardware is finished in dull silver. Toggle grips, arm rests and concealed door

pockets are other features.

On the steering wheel are the spark and throttle levers. In addition there is an extension arm carrying the horn switch and light dimming control. This makes it possible to dim the lights or sound the horn without removing the hands from the wheel.

The six-cylinder sleeve valve engine with its bore and stroke of $3\frac{3}{8}$ by $4\frac{3}{4}$ in., giving a

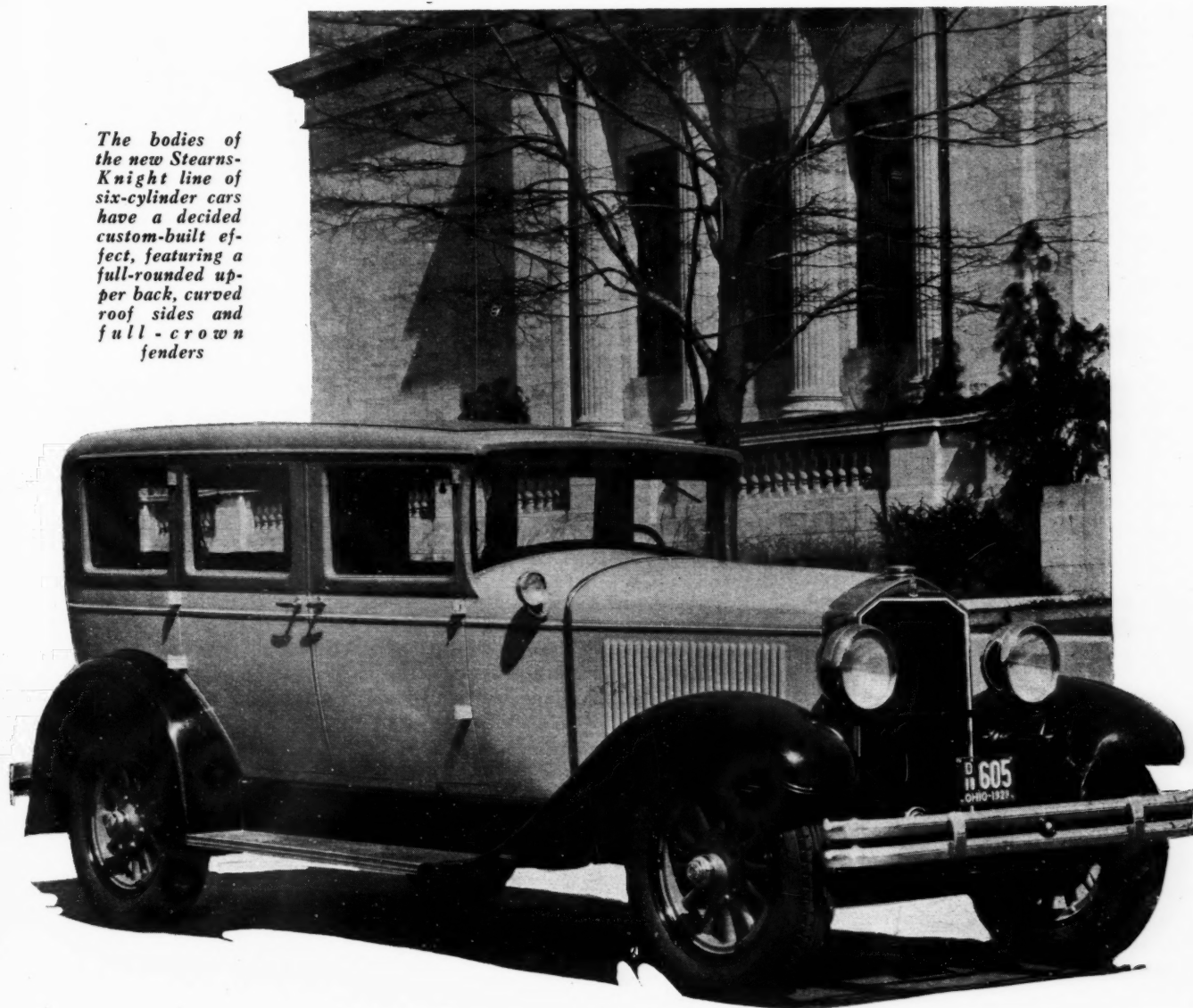
displacement of 255 cu. in., is rated at 27.34 hp. but develops a maximum of 70 b.h.p. The eccentric shaft is carried in seven bearings for maximum rigidity. This shaft is of conventional design.

The crankshaft has seven main bearings all of $2\frac{1}{2}$ -in. diameter. This shaft is drilled for force feed



Front-end view of the new Stearns-Knight six-cylinder series. Fenders are full-crowned and bullet-shaped headlights are heavily nickeled

The bodies of the new Stearns-Knight line of six-cylinder cars have a decided custom-built effect, featuring a full-rounded upper back, curved roof sides and full-crown fenders



lubrication. Thrust is taken by the center main bearing. All bearings are bronze-backed, babbitt-lined. Oil is brought under pressure to the wrist pin, camshaft and timing gears in addition to the main and connecting rod bearings. Sleeves and pistons are lubricated by oil spray thrown from the revolving shaft. An oil rectifier is used.

The cooling system employed is conventional, the water being circulated by a pump. The capacity of the entire system is $5\frac{1}{4}$ gal.

The fuel system consists of a Tillotson carburetor, Stewart-Warner vacuum tank, and gasoline tank at the rear of the car. The carburetor is of the well type and has an economizer needle.

Starter, generator and ignition unit on these cars are Auto-Lite.

The transmission has three speeds forward and one reverse. A Borg & Beck single-plate clutch is used.

Clutch and transmission are a unit with the engine.

Power is transmitted to the rear axle through two universal joints. All rear axles are three-quarter floating. On the 126-in. wheelbase cars the reduction is 4.7 to 1, while on the 134-in. chassis the reduction is 5.11 to 1.

Front axles are drop-forged and of conventional I-beam construction. Timken roller bearings are employed in the front wheels.

A total of 284.4 sq. in. of braking surface is provided on these cars. The brake drums are 14 in. in diameter. The brake applying mechanism is mechanical and acts of all four wheels. The braking effort is divided approximately so that 40 per cent of the effort is applied to the front wheels and 60 per cent to the rear wheels. The emergency brake operates on the rear wheels only.

Regular equipment calls for wood wheels. Wire wheels may be had at extra cost. There is also an extra charge for fenders equipped with wells for carrying tires.

On the 126-in. wheelbase cars tire size is 32 x 6.00 while on the longer chassis the size is 32 x 6.20.

A worm and sector steering gear is used. Every effort has been made to reduce the turning radius of a car of this size to facilitate turning in traffic.

The front springs are $41\frac{1}{8}$ in. long while the rear are $63\frac{1}{8}$ in., all being semi-elliptic.

Body Models and Prices of New Stearns-Knight Six

Cabriolet roadster	\$2,495
Close-coupled sedan	2,495
Five-passenger sedan	2,495
Five-passenger coupe	2,645
Seven-passenger sedan	2,845
Seven-passenger limousine	2,945

NEW WHIPPET IS LOWEST PRICED SIX

(Continued from page 25)

opens 38 deg. before bottom dead center. Tappet clearance is .004 for inlet and .006 for exhaust valves.

Full pressure lubrication to main crankpin and camshaft bearings as well as timing chain is provided by an internal gear oil pump located in the crankcase sump, the latter having a capacity of 7 qt. Cooling is ther-

mostatically controlled, the system consisting of a centrifugal pump located in the front of the block and driven by the fanshaft, a cellular radiator, with pressed steel shell, and a V-belt-driven four-bladed fan. The system has a capacity of 3¾ gal.

The fuel system is composed of a 10-gal. gasoline tank at the rear, with vacuum feed to a 15/16-in. vertical type Tillotson carburetor through a Tillotson strainer. The exhaust manifold is carried down at the front end to keep fumes away from the body. Auto-Lite electrical units are used throughout, with a semi-automatic distributor, having 10 deg. manual and 12 deg. automatic advance. Bendix starter engagement is employed. The manual control for the spark timing is located on the dash, and is needed only when starting, after which it is pushed in. The automatic range varies the timing then between 10 deg. and 22 deg. before top dead center. A USL 6-volt, 115-amp. hr. storage battery is supplied as standard equipment. Single-contact bulbs are provided in the lighting system, with resistance dimming for the headlights, and a combination tail and stop light furnished as standard equipment on all of these new cars.

In unit with the engine are the Rockford 9-in., single-plate clutch and three-speed transmission. The former has the woven fabric applied in eight segments, with outside and inside diameter of 8⅞ and 5¾ in. respectively.

Conventional design is seen in the transmission. The main shaft is supported on anti-friction bearings, while others are bronze bushed. Gear reduction in low is 3.625 to one, with 1.841 to one in second and 4.833 to one in reverse. Rear axle reduction is 4.89 to one.

Two metal mechanics universal joints are used in conjunction with the tubular propeller shaft, both torque and propulsion being taken by the springs. A single pressed-steel stamping forms the housing for the banjo rear axle. Axle shafts are of the semi-floating type, and made of 1 5/16 in. S.A.E. 4130 steel. Final reduction is by spiral bevel gear with 44 teeth on the ring gear and nine on the pinion. All rear axle bearings are Timken taper roller, as are the wheel bearings. Road clearance under the rear axle is eight in., with the standard 28 by 4.75 balloon tires.

Front axles have the usual I-beam center section, with reverse Elliott ends and roller thrust bearings in the steering knuckles. Four-wheel mechanical brakes are standard. Of these, the front wheel brakes are of Bendix manufacture and internal expanding, while the rear brakes are of Willys-Overland design without self-energizing action and of the contracting type. The rear brakes are also connected to the emergency hand lever by a separate linkage system, making operation entirely independent. Drum diameters are 10 15/16 in. for the

Body models and prices of the New Whippet Six are as follows:

2-4-passenger roadster ..	\$685
5-passenger touring	615
2-4-passenger coupe	695
5-passenger coach	695
4-door sedan	745

front and 12 in. for the rear wheel brakes. The latter take a total of 69¾ in. of 1⅞-in. width lining, while 1½-in. lining, 29 11/16 in. per wheel is used on the front brake shoes. This gives the service braking system a total braking area of approximately 220 sq. in.

A worm and wheel type steering gear is used on the

new Whippet sixes, with a reduction of 8½ to one. The steering wheel is 17 in. in diameter. The car has a turning circle of 37.2 foot diameter. It might be mentioned here also that the steering column is adjustable for position to suit the needs of the individual driver, another feature not generally expected in the low-priced field.

Springs are semi-elliptic all around, with lengths of 34½ in. for the front and 51¾ in. for the rear, both being 1¾ in. wide and composed of seven leaves. They are mounted in Tryon shackles, which are self-adjusting and carry within them an oil reservoir to reduce the frequency of lubrication attention. Chassis lubrication is by means of a pressure gun. Rear springs are under-slung.

The frame has a channel depth of 4¼ in., and flange width of 1¾ in., 5/32 in. stock is used, and four cross-members are provided with the rear engine supports of the four-point engine suspension virtually forming a fifth cross-member.

Bodies follow quite closely the general basic design lines of the Whippet Four. Frames are of hard wood, with pressed steel panels, double belt moldings and colored window reveals. Running boards are longer than usual in relation to the car as a whole, fenders are crowned without beading and of welded two-piece construction, and the radiator shape in general conforms to that of the former Whippet Six and the Whippet Four.

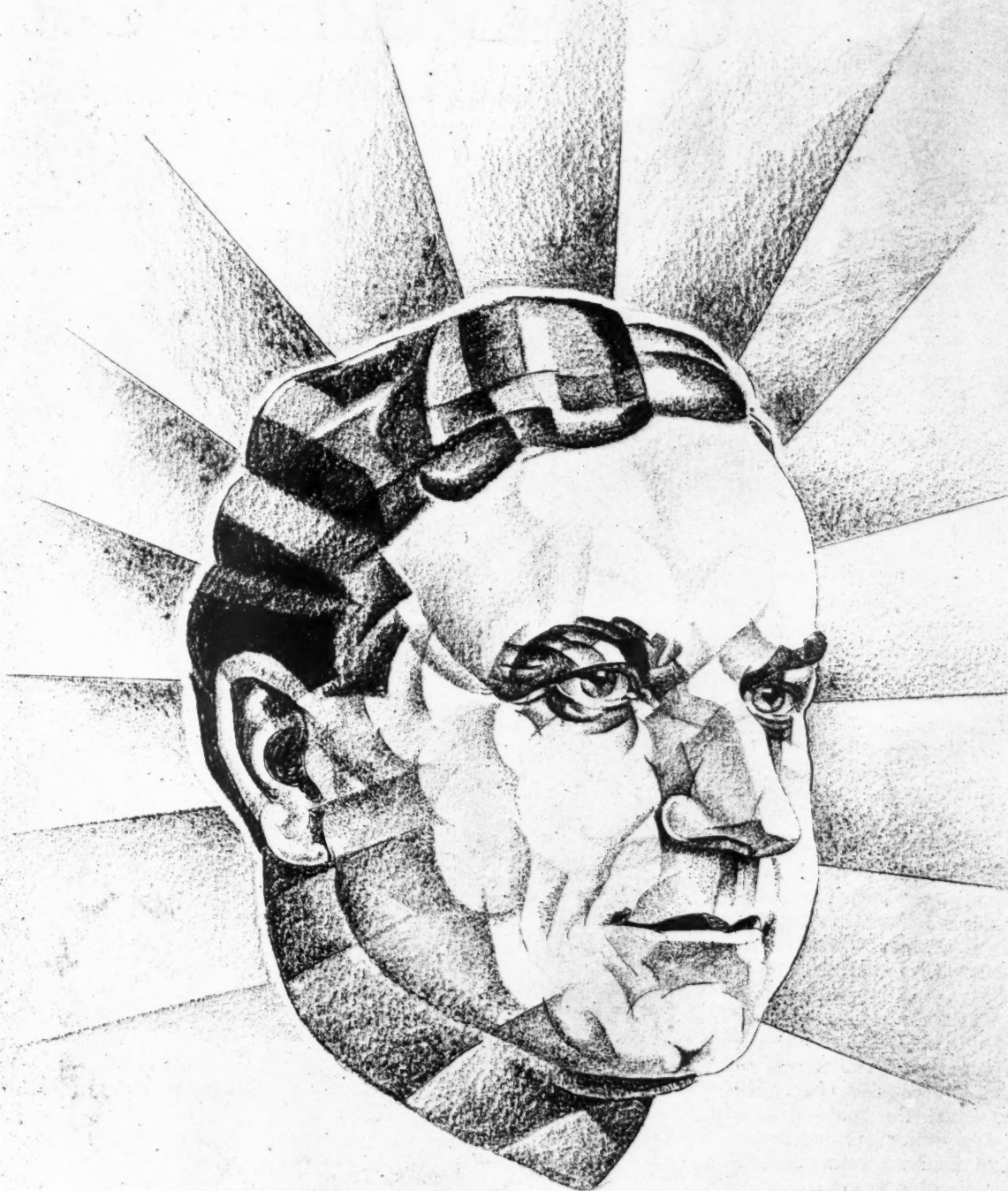
Standard equipment, in addition to the usual items, includes automatic windshield wiper of Trico manufacture on closed cars, as well as cowl ventilator and sun visor. Rear view mirror, combination tail and stop light and front snubbers are standard on all models.

One feature of the bodies which should be contributory to providing ample leg room is the extending of the dash 3 in. under the hood, which also assists in giving the latter longer and more pleasing lines. Wood wheels are standard, carrying 19 by 3½ in. rims. Windshields are of the one-piece swinging type.

Production of the new sixes has been carried on now for several weeks, and cars immediately shipped to dealers. According to an official statement, production schedules on the new six call for the largest production of six-cylinder cars in the history of Willys-Overland.

Announcement has been made of the addition of a new one-half ton delivery car to its line by the Studebaker Corp. of America. It is offered in two body styles, a screen body listing at \$795 and a panel delivery priced at \$820.00. The new delivery units are mounted on the chassis of the American edition of the Erskine Six. Standard equipment includes automatic windshield wiper, dome light, rear view mirror, hydrostatic gasoline gage and coincidental steering and ignition lock.

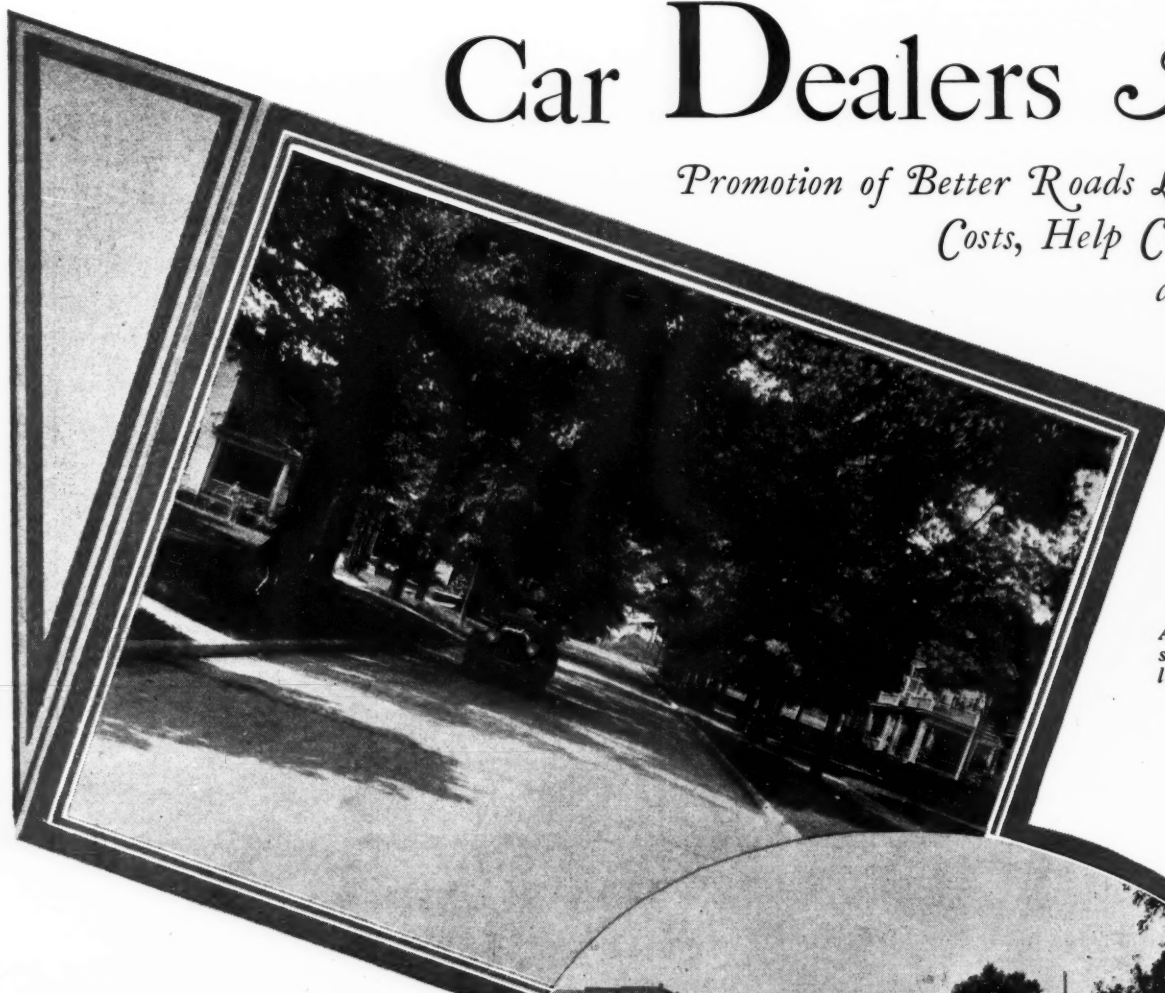
Pete Keenan



A MOTOR AGE IMPRESSION - G.A. KISSEL
President - Kissel Motor Car Co.

Car Dealers Must

*Promotion of Better Roads Locally Will
Costs, Help Create More
and Enlarge*



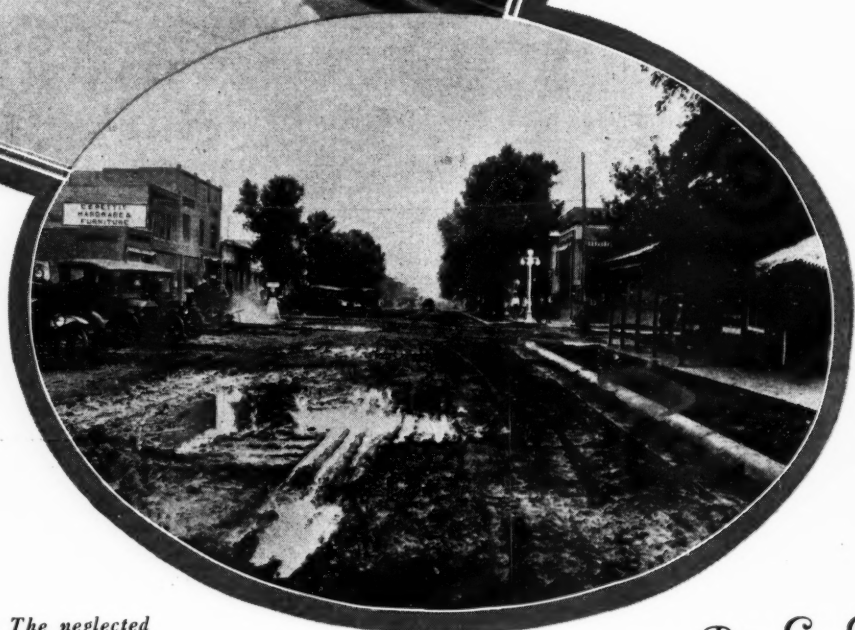
*A well-paved
street is a tire-
less automobile
salesman*

NEW customers, people who have never owned an automobile before, are becoming scarcer every day. This is despite the fact that 2,000,000 men and women become of age each year. The car dealer seeking new business in addition to his established replacement trade, has in the main but two courses open. He must either court the customers of his fellow tradesmen, or he must cultivate that field wherein are contained a still sizeable group of people who do not as yet own cars because of congested streets or deplorable rural roads.

The road and street must be considered as part of the automobile equipment. Automobiles are sold much easier in communities that have built an adequate supply of good roads or wide, smooth streets.

But of the 2,000,000 young men and women who each year assume full citizenship, few become immediate purchasers of automobiles. They must first of all get on their feet. School debts are to be paid. The low salary stage is to be passed. Then, there is the matter of marriage that eliminates as car owners a vast majority of women.

The potential car market is indicated by the per capita automobile registration for the various states. California leads, with one car for every 3.11 persons, while Georgia trails with 13 persons for each vehicle. It is



*The neglected
street pays no
dividends to anyone*

By E. E.

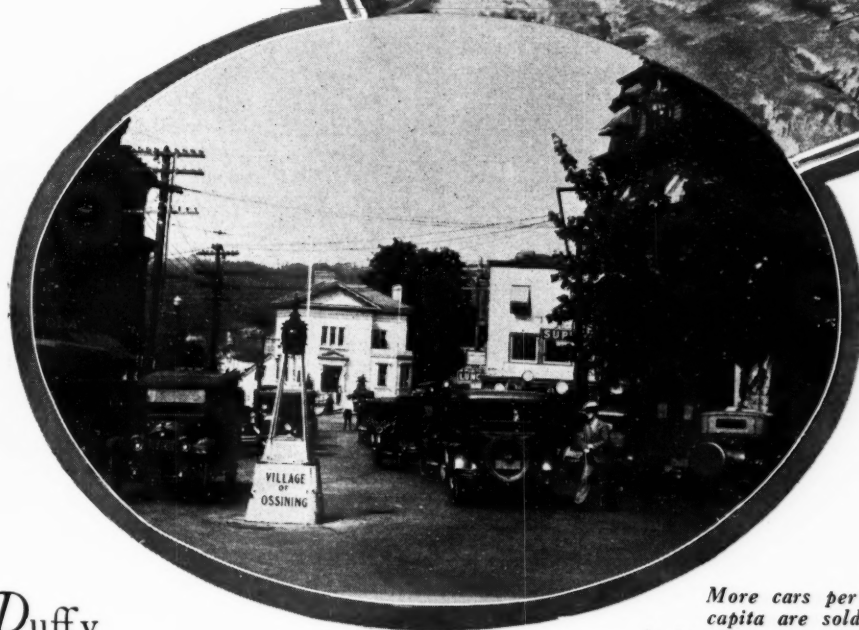
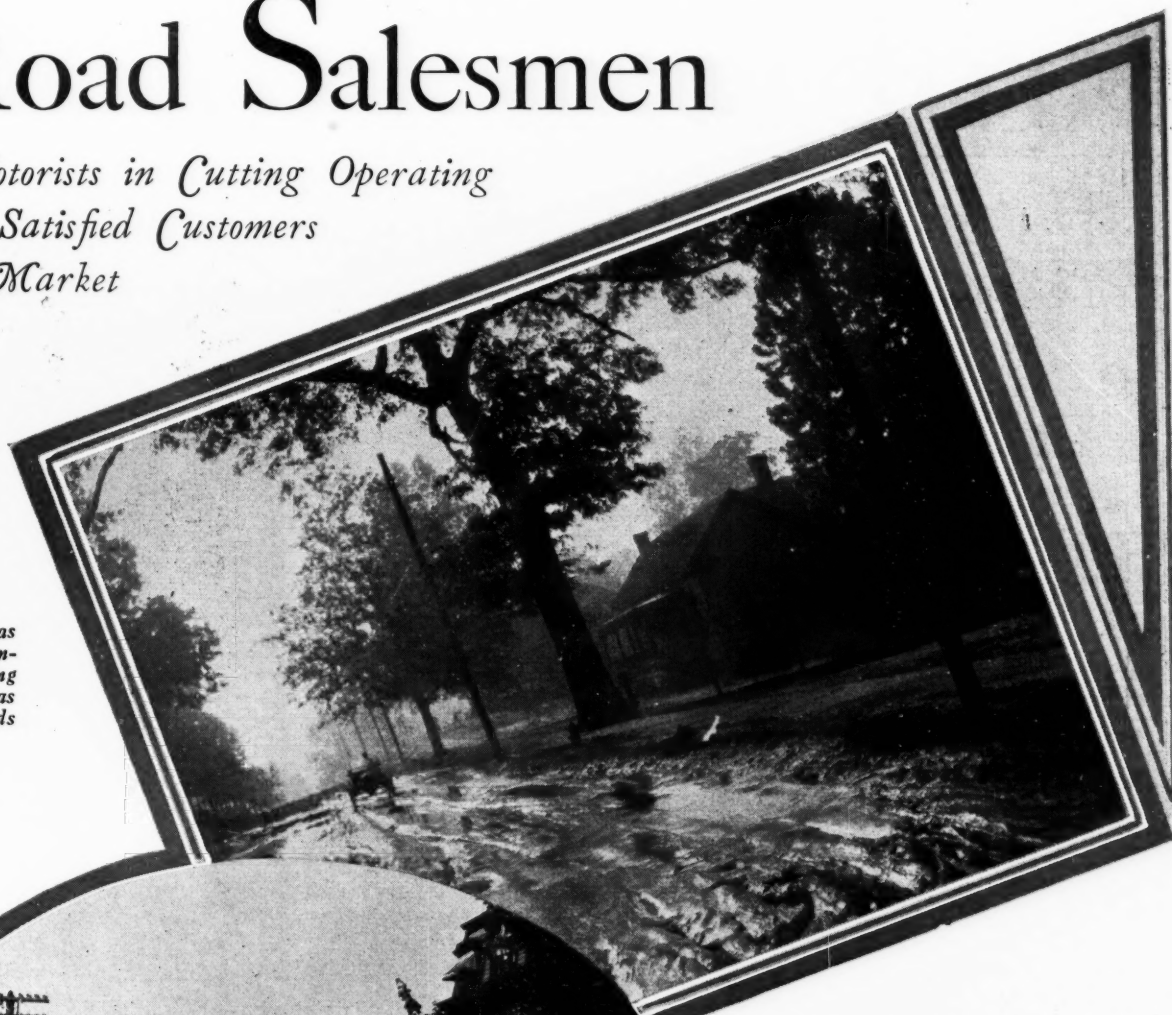
surprising to find that of the 20 states leading in car ownership only one New England State is included. This is Vermont which ranks seventeenth. The lead is taken by the more thinly populated Middle Western and Western States.

True, prosperity is partial. All states and component communities are possessed of varying natural resources, industries and people. The South has its great negro population. California and Florida have their wealthy pleasure and health seekers. The Middle West has its agricultural independence, coupled with growing industrialism. New England has its factories that brings its fluctuating periods of well being. Because every third Californian has his automobile it does not follow

be Road Salesmen

*Assist Motorists in Cutting Operating
Completely Satisfied Customers
Potential Market*

*Gumbo is as
much a preven-
tive in selling
automobiles as
the lack of funds*



*More cars per
capita are sold
in paved communities*

beginning to shake off the congestion shackles, has eight people for each car, while the melting pot, New York City, has 11.1 persons per vehicle. Can it not be said, then, that the network of modern pavements in and around Detroit has stimulated the sale of cars?

A gently flowing stream with tree and grass-covered banks provides the final incentive necessary to the purchase of a canoe. Likewise the street, whether in a large or small city, is an important factor to the possible automobile purchaser. If access to the city is nerve-racking and time-consuming, the advantages of quick personal transportation are counteracted. In the smaller cities

one frequently hears the remark: "I prefer to ride the street cars." Scarcely a week goes by that I do not hear some Chicago acquaintance extol the advantages of taxicabs over private cars.

The rural road situation is similar. Roads that are impassable a good part of the fall, winter and spring because of mud, make the possession of a car more of a luxury than a good many people can support. This is a bad situation, for the automobile is a year-'round vehicle; cold weather and rain mean nothing to it personally. It is a convenience for which the average person will sacrifice other things. Poor roads also cause motorists to retain their old vehicles, no matter how worn and shabby they may be. (Page 41, please)

that every third Georgian and Tennessean should have one too.

However, the mere knowledge that certain communities have attained the maximum of automobile ownership gives rise to the thought that car sales can be increased elsewhere if advantage is taken of certain principles. In scanning state and city registration figures the conclusion can quite confidently be drawn that the condition of the thoroughfares has a definite effect on the man who has enough money in his pocket to buy a car. Detroit, for instance, situated in Wayne County, with a greater mileage of wide, first class pavements than any other similar community in the world, has a ratio of 3.5 persons per car. Chicago, which is just

E. Duffy

Problem? No! *the Used*

To the Dealer to Prove That He Possesses Buying Ability and Deserves the Title of Merchant

THIS is the year in which automobile factories are going to find out about used cars. In recent years factories have heard about used cars, and some of them have appointed employees to look into the matter, but this is the year in which they are going to begin actually to find out about this most unusual commodity.

The question will herein be considered from two angles, (1) that there is no such thing as "the used-car problem," and (2) there is really nothing else to deal with or in than used cars.

Let us start from the more familiar premise. Last year there were filed in Cleveland 32,240 new-car bills of sale, and 121,830 bills of sale for used cars. If individual confirmation of such relativity is desired, followers of this report are invited to consider their own scarcity of so-called "clean deals." In fact it is currently reported that deals minus a trade-in are acclaimed in some quarters in Cleveland with nothing less than a cash discount in celebration thereof.

Recognition of this prevalence of exchanges leads to a series of deductions, and the word deductions rather than conclusions is used advisedly in case there be authorities disposed to dispute the findings:

1. The 1928 new-car market is not limited even to the 5,000,000 vehicles oftentimes forecast, providing the distribution outlets of the industry could finance or assimilate the used vehicles necessary to accept as part payment for the greater proportion of same.
2. For these new cars there is no such thing as list price.
3. If a price war is to break out, the maintenance of prices or not maintaining is up to the dealers.

What do we mean by list price in the automobile business? Do we have in mind the published figure at which the product is supposed to be moved to the consumer? If so, how many cars do you know of that are sold at that price net? And it may be stated as corollary that the buying public is not unmindful of this condition.

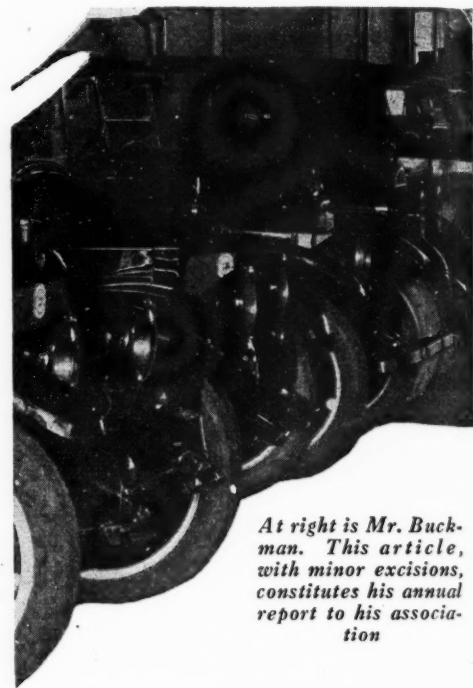
Anybody and everybody wants a new car. No one can be blamed for desiring one of the splendid new vehicles such as are being turned out by every automobile factory in the land. All of these new cars are wonderfully attractive and wonderfully good.

Put a dealer, therefore, in this hypothetical position. His concern is an established outlet for used cars. By reason of confidence in the house and through mer-

chandising repute, he is in a position to say to prospective customers, "Permit me to put your discarded vehicle through my outlet and I will obtain for you a new car of whatsoever make strikes your fancy." And the dealer who is in no such position of sure outlet for discarded vehicles is taking himself out of the new-car picture also.

There are, for example, three things with which customers pay for new cars: (1) the used car; (2) an amount in cash; and (3) notes for an amount deferred. There is regularly organized, definitely based, machinery for handling the notes and any cash that may be involved. It is the used-car portion of the payment that offers the dealer his greatest opportunity. Use of the term "greatest opportunity" is based on the premise that the greatness of a merchant is based on buying rather than selling ability. This is the dealer's opportunity to prove his buymanship. Every once in a while we hear some automobile merchant compared to the big department store or outstanding establishment in another line. Then contrast for a moment the important place which the buyer exercises in the drygoods or department store with that accorded purchasing in the motor merchant's scheme of things entire.

Now let us glance back for an instant or two at the motor merchandiser's plan. He is in the new-car business—that is his business—the foundation on which for years we believed his existence, progress and prosperity to be based. Shall we say then, for the purpose of argument or exposition, that new cars are his principal stock, the paramount factor of his business? How much buying ability does he or can he exercise in the acquisition of his stock? He obtains (one hardly calls it buys) the product of one factory with a listed selling price at a fixed buying cost. On the other side of the store, however, are used cars. That oftentimes hidden-away, secondarily considered department holds the elements of his success or failure, life or death. In that vital spot must be exercised the motor merchant's buying ingenuity. The life, the very existence, of an automo-



At right is Mr. Buckman. This article, with minor excisions, constitutes his annual report to his association

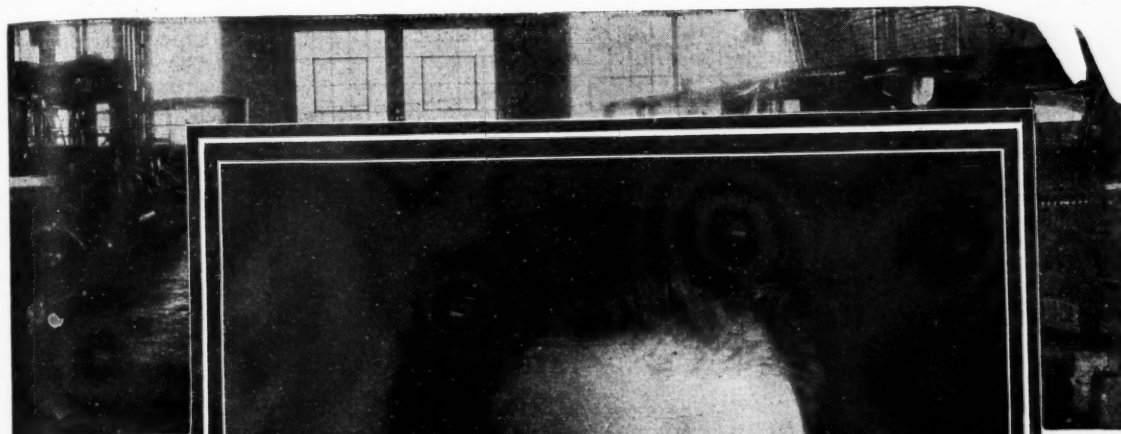
Car is a Challenge

By

Herbert
Buckman

(Manager,
Cleveland Auto-
mobile Manu-
facturers and
Dealers Association)

7



bile dealer depends on three points: proper factory connection, used cars, salesmanship. Used cars, we see readily, are first and foremost in the buying category. The establishment of adequate factory relationship is the motor merchant's constant employment of the purchasing faculty. Once the factory connection is established, the day-to-day existence depends upon the continuous exercise

of buying ability. That is the one spot remaining which permits latitude—that is where there is determined the question of whether the dealer is a real merchant. There lies the margin of profit as surely as it lies there for the drygoods store, the grocery store or the hardware store—in goods well or poorly bought.

The point to be stressed here is—that where there is latitude, where there is room for the exercise of buy-manship, there is the opportunity affecting profit.

The department stores' coups come in the cleverness of buyers, and there also, whether we realize it today or not, must come the livening appreciation of automotive opportunity.

Pray do not, in a confusion of the issue, accuse this treatise of so trite a treatment as seeking to make news of the used-car department's phase as purchasing agent, but the effort here is to emphasize that liberalizing the purchasing faculty is the portal to latitude in profit.

Another field in which the motor merchant enjoyed searoom for exercise of buying ability, but which temporarily at least is being greatly diminished, was in so-called accessories. There is no need to recite here views previously expressed as to the advisability of car dealers handling supplies for the after-market or the absorption of a large section of the accessory business by car manufacturers.

There is just one additional phase of the accessory situation desired to pass along at this juncture. Discarding for a moment the car dealers' being deprived of some accessory sales, a serious objection to the manufacturers' furnishing of many equipment items may be expressed from a user's standpoint. It is briefly this: that when the manufacturer adds numerous accessory items, the manufacturers' purchasing department so closely regards price that the accessories accompanying the car oftentimes depreciate the quality of the vehicle itself.

Recapitulating, the dealer thus finds himself with used cars as the outstanding item on which he can make or lose money, and which in addition constitutes

PROBLEM? NO! the USED CAR is a CHALLENGE

the sole outlet for genuine merchandising ability.

Let us now hark to phase No. 1—that there is no such thing as a “used-car problem.” What we have is merely our peculiar phase of a world-wide and general commercial problem of over-productive capacity. It was an evil day when we started to call the automobile industry’s paramount difficulty the “used-car problem.” With the use of that term, the problem has been up to now, with apparent justification, left on the doorstep of the dealer. The year 1928 will undoubtedly witness adoption of the offspring by the industry as a whole for reasons which are becoming increasingly obvious. The basic fact is that in practically every line of business, production has run ahead of the world’s consumption capacity. There is still lack of adjustment between a workman’s productive potentiality and his compensation. Because of modern methods one man can produce so many more razor blades than there are faces to be shaved needing them, that razor blade becomes cheaper and the laborer’s working time reduced. Briefly stated, there is a degree of maladjustment among production, compensation and consumption. This can be emphasized by a few examples recently made plain by legislative consideration, financial reports or daily observation; for instance: real estate allotments, wheat, textile wares, copper, space in office buildings, Carnegie Avenue frontage, radios and coal.

Different industries have sought varying methods of adjustment to the new era in production. In automobiles the price shifting has expressed itself more largely in terms of used-car allowances. The fault lies, there-

fore, not in the used car of, for and by itself, but in our having made it the scape-goat for general industrial ills. So long as we called it “used-car problem” it has remained principally for the consideration of the trafficker in that commodity, the retail dealer. The prospect is that in spite of precedent, in spite of terminology the effect now is reaching to manufacturing sources in an unmistakable manner. There is no intention to insinuate that all factories have at all times intentionally evaded a share of responsibility, but this year the barrage will reach back beyond the front line trenches. It might even be said that shells are already dropping in the region where the captains of industry hold forth. Such a condition may be said to exist when—as now—dealers in some of the foremost and best known lines, have stocks of used cars so large as to use up their available resources and compel rejection of factory shipments during the big production months of January, February and March. When production backs up for such a reason at this time of the year, the factories may be said to have been immediately sensitized, and the problem to be affecting the industry as a whole rather than confined or defined by a term “used-car problem.”

Therefore, seriously considering the industry’s critical situation as our particular phase of a world-wide development, improvement or betterment may be achieved through insistence on universal and fundamental principles of good merchandising, more nearly than by hunting through a commercial patent medicine cabinet for nostrums.

Showing a 10 Per Cent Profit in Spite of Trying Times

WHILE the year of 1927 was one of small pickings for many Ford dealers, the Wood Motor Co. of San Angelo, Tex., Ford dealer in a county of about 30,000 population, made good. To be sure, the sales of new cars were below the 500 mark, and there was a rent of about \$8,000 annually for the use of the quarters occupied by the company but on the other side of the ledger is found a repair department netting \$6,000; a used-car department which earned a net profit, and a finance plan which helped to add to the revenues of the firm.

D. T. Wood is the president; William Bates, the vice-president; Horace Goodson, secretary and treasurer. Here is how the business kept its head above water and made more than 10 per cent on its capital in spite of the hard year.

The company sold 428 used cars during the year. The appraiser of the cars, Sam T. Runkles, allows the seller the market value of the car and when the car is sold it is marked up \$20, and overhead per used car and the value of parts and of labor at list are added to it. The used cars are put out with a guarantee and 90 per cent of these used cars were sold on time. There were only 20 repossessions of the used cars, trucks and tractors sold. The used-car sales were made just as carefully as the new-car, and with due regard to making a profit on them if possible.

All of the 20 workmen in the shop are on a percentage basis, 60 per cent of the money received for their work going to the company. It has worked fine, both for the company and for the public and the mechanics. Mechanics who formerly made \$135 a month

are now earning about \$200 monthly. If they turn out a job and it doesn’t stand up, it is up to them to make it good. Should the mechanic be busy at another task then some other man is assigned the job and the work charged against the mechanic who first did the work.

The flat rate system of pricing work is used. The firm does no work on credit except in the case of old established firms. It is cash on the barrel head.

The parts business is the “ham and eggs.” It makes a good net return.

The sales force of the company was reduced during the time that no new cars were available, and those kept on turned their attention to the selling of tractors, threshers and farm implements. In the middle of February the firm had 480 orders for the new Ford with cash deposits accompanying each of them. Since then, this total has been considerably augmented.

The financial plan is one kind of revenue that many dealers fail to consider as an asset. It is, in the case of the Wood Motor Co., a matter of granting credit and making money by so doing instead of allowing some finance company to take the paper and make the money. Money secured by the company at a relatively low rate earns for the concern a nice return after all expenses of borrowing it are paid. The company makes it a rule never to grant an extension, unless in unusual cases, to those paying out the used cars. The owners are allowed, in cases where the credit manager, Oscar Butt, thinks it necessary, to store their cars for a matter of two weeks and then pay off what is due. But an extension on an old car has been proved to be bad business.

Succeeding in a Big Way in a Tiny Town

PRECEDENT doesn't mean a thing to A. N. McDole, head of the Mack Chevrolet Co., Bellflower, Calif. (population 650). In the first place he didn't have any automobile trade experience, but that did not deter him from entering the agency field. And in the second place, after he had once launched in business for himself, he did not inquire too closely into how other dealers were conducting their businesses.

In short, if Mr. McDole hits upon an idea that sounds practical to him, he doesn't search the country over to find someone else who has tried it. Not a bit of it. He tries it himself, and generally it works out much as he had visualized it.

The previous Bellflower Chevrolet dealer sold four or five trucks a year; McDole sold 25 in his first six months in business. His contract called for 100 new cars; McDole sold 125 in six months. This year's allotment is for 200 new Chevrolets. His predecessor had a one-man service department in a typical two-man town; McDole employs six in the shop.

Probably the secret of Mr. McDole's quick, yet solid success, is traceable to his policy of supervising all activities himself, and personally doing as much of the work as physically possible. He doesn't believe in the small-town dealer delegating important details to other, and generally less interested, persons.

"Before I took the Bellflower agency, I made a thorough survey of the territory. I found that it was essentially a center for a large rural population, and within a few miles were several other small communities. A likely truck market I found.

"I took a one-year lease on what I believed would be inadequate quarters, a building 37 by 90 ft. in size, and opened up for business Dec. 16, 1926. Not until



Mack Chevrolet Co. quarters in Bellflower, Calif.

*Proper Cultivation of a Rural
Community Enables Chevrolet
Dealer to Reap a Bump-
er Crop of Sales and
Service Work*

push it, Mr. McDole sees little difference.

"It is true that a truck is in the shop oftener for service due to the heavy usage that it receives, but for this very reason the owner of that truck is in the market for another truck sooner than a passenger car owner, so that extra service is more than balanced by extra sales."

Mr. McDole doesn't believe in a sliding scale of remuneration for salesmen. He points out that this offers an inducement to salesmen to carry probable sales from a poor month into a good month, but that in this carrying process many sales are lost, and both the salesmen and dealer suffer.

"The trouble with some dealer organizations is that the executive heads do not work with their salesmen. For example, we have one man with us who is making \$350 a month on an average. He is a high-strung salesman, not unusual in car organizations. With the last car dealer this salesman was practically no good. Every morning the sales manager had him up on the carpet, and the result was that he went into the field every day

By
Harold J.
Ashe

J

Jan. 2, 1927, however, did we make our first sale, as prior to then we didn't have any stock.

"With that big potential market for light trucks, I have from the first stressed that branch of our activities to our salesmen, and to the public

through our newspaper and direct-mail advertising.

"I now have a list of all truck owners in my territory and am circularizing them and having salesmen call on each one to get a report."

While many dealers consider the truck business less profitable than passenger cars, and therefore do not

SUCCEEDING IN A BIG WAY IN A TINY TOWN

with real or imaginary grievances that so wrought him up he could not concentrate on selling. Whenever I have anything to discuss with this salesman, I do it at night and he thrives on it. He has the night to think about any of my criticisms or suggestions before he again meets any prospects. Simon Legree tactics are all wrong for salesmen.

Real salesmen are essentially free-lances, that's why selling first appeals to them, and whip methods won't work with them."

The Mack Chevrolet employs four service men, besides an experienced Duco man and a wash-rack man.

"Usually a town of this size keeps about two service men," said Mr. McDole. "There are but two services in this territory: Chevrolet and Ford. Future sales depend upon service. Prospects come in for service and reach the point where they need to trade. I personally go over every day's service reports; I do not delegate this follow-up work to anyone else. It is too important to my organization and myself."

Mack service men are paid a straight salary, due to the large amount of free service work that breaks into their efforts. Later on, however, it is planned to place two men on flat-rate and two on salary. Flat-rate charges are in effect now in the shop.

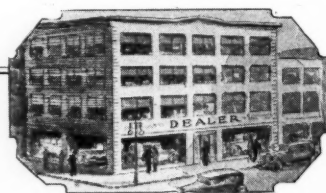
Mr. McDole breaks even on his used cars. Every week he carries a display advertisement of about two full columns in the local newspaper. This ad is ruled off into separate spaces for the listing of each used car. Each car carries a number and price at the left, while to the right is the make, year and short description. Topping the ad appears the number of cars sold since Jan. 2 (the date the company started operations.) This figure, of course, changes weekly.

"While I have no way of tracing the results of the display advertising of used cars," stated Mr. McDole, "I would not like to attempt to find out by stopping the ads."

Probably it is Mr. McDole's penchant for unusual advertising that accounts in a large measure for the quick pick-up his business has attained. Not long ago he staged what he styled a "Peacock Party." This affair was widely advertised, but the details of it were withheld, not only from the public, but the salesmen themselves didn't know much about it.

Mr. McDole purchased a special edition of the Bellflower Herald-Enterprise, a thriving semi-weekly, as the chief medium through which he would acquaint the countryside with the big doings to be held at Chevrolet headquarters. Five thousand copies of the eight-page paper were distributed in all towns and villages for 10 miles around.

An eight-column headline announced the Peacock Party on the first page of the newspaper, while stories were run throughout the paper about the party and the Mack Chevrolet Co. Much local news published in



THE trouble with some dealers organizations," says A. N. McDole, "is that the executive heads do not work with their salesmen. Simon Legree methods are all wrong for salesmen. Real salesmen are essentially free-lances, that's why selling first appeals to them, and whip methods won't work with them."

the last regular edition of the newspaper was also run in the paper to lend authenticity to the publication. Peacock sketches were used profusely throughout the paper, in ads of the Mack Chevrolet and other cooperating advertisers, and also in the news columns.

"The entire cost of the party was paid for by the advertising space we

sold in our special edition," explained Mr. McDole. "Two days before the edition went to press we sent out form letters soliciting advertising from local merchants, jobbers, etc. We emphasized the fact that immediate action was necessary and most of them responded nobly."

Then an aeroplane flew over the territory covered by the newspaper and distributed 75,000 admission tickets, about $\frac{3}{4}$ by 2 in. in size.

The party lasted for two days. There were 10 prizes aggregating \$75, the first prize being a \$25 allowance on a Chevrolet, while the others were accessories. Next door to the car agency the moving picture theatre exhibited a Chevrolet film, while across the street the local dance hall helped to hold the crowd of 5000 people until late at night, when the distribution of prizes was made.

The affair attracted one of the biggest crowds ever swarming the streets of Bellflower, and took on the aspect of a community event.

"The second day of the party we sold an entire month's allotment of Chevrolets," said Mr. McDole enthusiastically.

"However, our used-car displays didn't go so well. They had no place in our dolled-up Chevrolet party, as we found out after the event was over. Nevertheless, we capitalized this failure by publishing a large display ad calling attention to the failure of the used-car event, and in bantering vein admitted that the joke was on us. This in itself created no little comment, for it struck a new note in local advertising."

Mr. McDole believes in selling as much as possible to every new-car customer. Accessories are a hobby with him, but he doesn't wait till the new car is on the road to make sales of accessories. He equips every Chevrolet with extras, while it is still on the sales floor. This makes the car more desirable in the eyes of the customers, and makes sales actually easier, in the opinion of Mr. McDole. Besides the selling factor, these extra accessories bring an additional \$30 gross profit that might otherwise slip by the cash register.

"We sell at least 75 per cent of our cars fully equipped," declared Mr. McDole. "People are loath to strip the cars after having seen them with all the extras on."

Is it any wonder that Mr. McDole is now planning to build a modern automobile sales and service building that will cost in excess of \$10,000, and that with only six months' automotive sales experience behind him? The correct answer is: It isn't!

CAR DEALERS MUST BE ROAD SALESMEN

(Continued from page 35)

Right: Why aren't these gentlemen driving automobiles?

Below: The cost of poor roads is often higher than the cost of good roads, because of higher operating expenses, higher road maintenance charges and because of the curtailed period in which the automobiles may be used



The local automobile dealer can with profit devote some of his time to the promotion of better roads in the territory which he serves. If he can assist the motorist to cut his car operating costs then he has helped create a more completely satisfied customer. Investigators have determined that the motorist in traveling over good hard pavements rather than earth roads will save 2.6 cents per mile in car costs alone. The saving possible through pavement driving rather than gravel is conservatively estimated at 1.5 cents per mile. Apply this saving to the community and the waste avoided is tremendous, for a single motorist in trailing the average distance of 5000 miles, may save from \$50 to \$125 a year.

So the dealer who has interested himself in good roads has brought about a greater prosperity to the entire community, inasmuch as the prosperous agricultural section of today is one that is threaded by good roads that make marketing easy and economical throughout the year. This means a widened passenger and commercial car market.

The car dealer may feel himself helpless in good road matters. He may consider that the building of roads and streets is beyond his ken, that the city engineer, the county commissioners or the state highway department know their business better than he does. If this attitude were to have been taken by the entire citizenry a decade ago, the good road mileage, in all probability, would be no more than half as large as it is and the automobile market at present would be a weak and wobbly affair. By the very nature of his business the car dealer should be involved in some way in every

good roads step taken by his community.

Four major activities are open to the car dealer that may bring about an increase in better highways. These are:

1. The placement of interviews and advertisements in newspapers.
2. Explaining the merits of a better roads system to motorists.
3. Civic clubs.
4. Contact with legislators, state highway commissioners, city officials and others handling road affairs.

At first glance, it might appear that all of these possibilities are either too difficult or are of doubtful value. But this is not so. Take the newspaper medium, for instance. Newspapers expect to run "free publicity" for automobile dealers along with the paid advertisements. For the most part this publicity matter is prepared in the home offices of car manufacturers. Would it not be a decided advantage to the local dealer to occasionally intersperse this "canned stuff" with something of local appeal? Would he not attract attention to himself and his firm if he were to frequently urge the passing of a bond issue for street or rural road improvement? The editor of the paper would also appreciate this, for his automobile section is all too often a dreary affair. Editorial assistance in the preparation of interviews from the newspaper itself, contrary to general belief, can be easily obtained.

But how can the car dealer devote advertising space to the promotion of good roads with profit to himself and justice to his line of cars? A single line in the advertisement is all that is needed. Slogans, such as, "Let's Save Money By Building Better Streets," or "Pave and Save," could well be placed in a convenient place in the advertisement with no additional cost. A line to the effect that "The Castenet Six Gives You the Most Enjoyment Over Lake County's Roads," has no good roads value. Give a little space wholeheartedly and the good-will built up will be the immediate compensation.

Misinformation on the part of motorists concerning road-building programs, bond issues, gasoline taxes, etc., can be no better corrected than through the local dealer, who because of his position, wields a great deal of influence. The dealer is himself a believer in good roads, otherwise he would be running a hardware store or a blacksmith shop. No opportunity should be overlooked to broadcast the wisdom of good roads. Point

CAR DEALERS MUST BE ROAD SALESMEN

out the savings in automobile costs, the savings in road maintenance, the increased pleasure of riding over smooth roads. The matter of maintenance alone oftentimes justifies the original expenditure of a considerable sum of money. Old, shop-worn streets and roads soak up funds faster than a gambling resort. New York State, for instance, found that it was paying \$618 per mile to maintain bituminous macadam roads and \$779 per mile for water-bound macadam, while the rigid pavements were costing only \$174 per mile. Similar conditions are to be found in almost any dealer's territory. If so, the way is clear. By making the facts known to the motorist a receptive mood will be created and subsequent good roads measures will have a greater likelihood of being passed.

Civic clubs constitute an important influence in the community. The dealer may find an outlet for his road interest by affiliating with the good roads committees of whatever organizations he is a member. The Kiwanis Club, the Lions Club, the Exchange Club, the Chamber of Commerce, etc., are all organizations that have, or should have, an intimate interest in local road problems.

If the need for outside help is felt, a few inquiries may bring the needed assistance to light. In Indiana, for instance, the Indiana Good Roads Association has been formed by a number of the state's leading citizens in the effort to accelerate pavement building. Members of the board of directors of this group are willing at all times to address civic clubs, bringing to them the latest developments in Indiana highway finance and outlining steps that may be taken to bring about a more freely flowing traffic with less actual expense to the state. Doubtless similar organizations are functioning in other states.

Road problems are possessed of so many ramifications that carefully laid plans and full knowledge of the conditions are necessary to success. Consequently the most important thing the car dealer can do is to establish contacts with those who are charged with building highways. It may be necessary to communicate with or visit state highway commissioners and county officials to ascertain why certain road projects are being held up or neglected. Township officials, too, are a

valuable source of information. Data on new construction expenditures and on road repair work furnish the essential basic ammunition for a good roads campaign. It is difficult to convince without facts and figures.

Expanded state road programs benefit the local community. With this in mind the automobile dealer could do no better than to support progressive state road-building measures. Through the cooperation of the Federal government, national funds to the extent of \$75,000,000 a year are made available to the states that comply with certain scientific and common sense principles. Most states have profited mightily through the leadership of the Bureau of Public Roads and have established efficient state highway departments. In turn this influence has been carried on to the county and township roadbuilders. Further, state highway systems, usually coinciding with the Federal-aid system, are being extended to embrace all the heavily traveled highways within the borders. It is not uncommon now for counties to pave roads, turning them over to the states for perpetual maintenance.

No set rule can be presented for state highway promotion since state laws vary widely. Some states, for example, cannot issue bonds for internal improvements. In the West, thinly populated states have at times been unable to take advantage of Federal-aid by providing the necessary state funds. Ambitious counties, however, have provided the funds with the stipulation that the roads be constructed within their boundaries. So in road building, as in love, war and horse racing, where there is a will there is a way.

Possessed with road facts, the dealer can become a potent factor in removing the greatest obstacle to the successful continuance of his business. Poor roads and streets constitute a hazard that is both mental and physical. Cities are actually sick from traffic congestion, yet many make no real effort to bring relief.

There are those who declare that in 70 years the population of the United States will be 210,000,000 people; that these people will require 70,000,000 cars. But all that is far in the future. Immediate profits depend upon immediate action. More automobiles can be brought about by more good roads.

Ask Me Another

DOES Miss Landalet drive her new coupe when she Rolls around to sedan? If she goes too fast for the dash to last, will she rub the paint off her "Pan?" Can you rate a car as a waiter since it carries two license plates? Or call the chassis a toper because it has oiling dates?

Can you call a car a hotel because of the running-board fad? Or, better still, an apartment house in view of the flats it had? What in the world does the spare tire spare, and why is the tail so light? Does the muffler keep the motor warm, and will the fellow fight?

Is the clutch engaged to the motor because of the piston's rings? And can you thread the needle valve or fold the butterfly's wings? Are there any flies on the flywheel, or brains in the cylinder head? Should an owner hold a funeral when he finds his motor dead?

Does water run in the frame channel or flow from the springs in the seat? And are the gases exhausted

because the valves have their seat? Do the spark plugs sit on the rocker arms and spark with the motor's miss? Or can the "bow" in the one-man top give the flapper valve a kiss?

Does the spark gap at the cylinder bore because the wheels are tired? Does the battery get its discharge as soon as the mixture's fired? Can you string the beads of the tires, or beat on the drum of the brake? If you went to sleep in the combustion chamber, do you think you would ever wake?

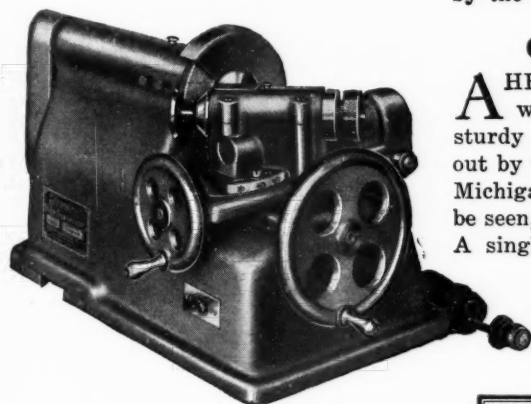
Is the juice of the battery made from the currents set up in the magneto line? If mixed with cement and allowed to ferment, would it make very good wine? When the breaker points at the magneto and says, "More power to youse," does it make you think of a pre-war drink, like Scotch or French vin rouge?

If you can choke a motor that sputters, and make it come to life, would the same procedure work as well on your mother-in-law or wife? Now, if you're tired of all these questions whose answers you can't contrive, why not lie back in the tonneau and let the Bendix Drive?—M.E.T.

Useful Shop Equipment

Valve Refacer

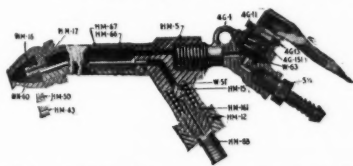
THE Model T-382 is the latest development by Stevens Walden-Worcester, Inc., of Worcester, Mass., in valve refacers. The grinding wheel of this machine is 4½ in. in diameter



and ½ in. wide and rides on an unusually heavy spindle. On one end it is carried on ball bearings while the other end is supported on adjustable taper bronze bearings. A split collet grips the valve stem firmly at both ends. Three collets are supplied, two for all ordinary stems from 5/16 to 7/16 in. in diameter. Special collets designed for the new Ford valve is the third one referred to. All valves up to 3½ in. in diameter can be refaced on this machine. The carriage is plainly indexed for 30, 45 and 60 deg. grinding. Both transverse and longitudinal carriages ride in a gibbed slide to take up wear, insuring smooth action at all times. The price of this machine, ready for use on 110 volt alternating current, is \$95 net. The price is slightly higher if a direct current motor is required.

Heavy-Duty Gun

A HEAVY-DUTY engine cleaning gun, known as the Romort Type HM is here shown. In this gun the air is controlled by a lever and the cleaning liquid which may be either kerosene, gasoline or special cleaning compound, is controlled by a needle valve. This gun is 22 in. long, the nozzle being 16½ in. with the gun and stem 5 in. A 5/16 metal hose, which is fur-

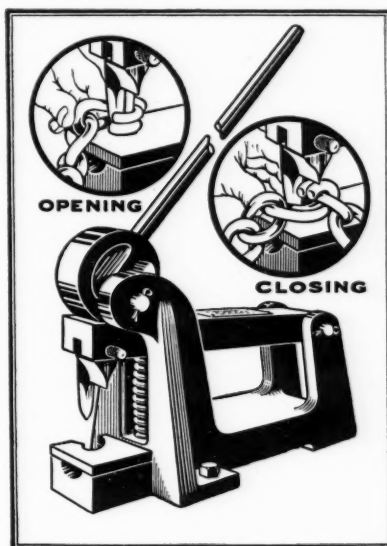


nished with this equipment is 6 ft. long. The entire gun is of bronze casting

with the small parts of brass. This is particularly adapted to cleaning dirt and grease from engines or other parts, either as a service in itself or for the purpose of speeding up repairs. The price of this gun is \$7.50. It is sold by the Zinke Co. of Chicago, Ill.

Chain Repair Tool

A HEAVY-DUTY chain repair tool with powerful leverage and sturdy construction has been brought out by the American Chain Co., 215 N. Michigan Ave., Chicago, Ill. As will be seen, the construction is quite simple. A single operation of the handle will either open or close any links from the smallest to the largest. This tool has been developed as a result of the popu-



lar acceptance of a similar but lighter tool introduced to the trade about a year ago.

Bench Grinder

THIS grinder is equipped for use with wire buffing wheel or leather polishing wheel. It has a Valley ball bearing motor of ½ hp. capacity, which is totally enclosed. Speeds of 3600 or 1800 r.p.m. may be had in these motors for the same price, but it is stated that the motor of 3600 r.p.m. gives the best grinding results. The unit is designed for alternating current, 110 volt, 60 cycle, but can be reconnected for 220 volt and two or three phase current if desired. It is equipped with indicating toggle switch and rugged tool rest which is adjustable for wear of wheel. The size of the wheel is 6 by 1 by ½ in.,

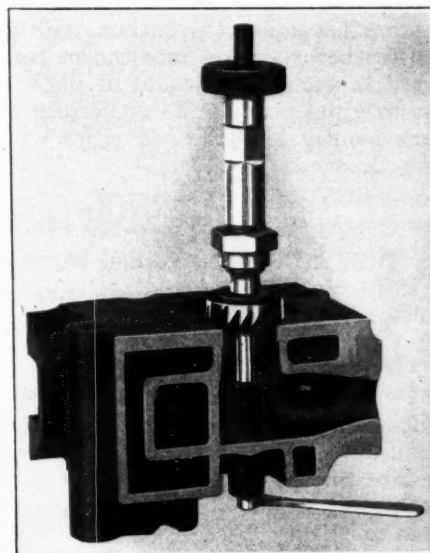
but is not included in the price of \$45. This bench grinder is made by the



Valley Electric Co., 4515 Shaw Ave., St. Louis, Mo.

Positive Feed Reseater

TO prevent the valve reseating reamer from slipping over the hard glazed surface, Gabel Brothers of Fond du Lac, Wis., have brought out the Gabel positive feed valve reseater Pilot Stem. This stem is inserted in the valve guide in the usual manner and a key is inserted in the lower end of the stem. The knurled nut on the top is



then turned down until the cutter makes contact with the seat. It is then pulled up a little tighter so as to impose a slight pressure on the cutter. The pilot stems will fit all reamers with the No. 2 Sioux taper. Complete with three standard stems the price is \$7.50, with any oversize stems selling for \$1 additional.

TIME TOLLS KNELL OF TOLL ROADS

(Continued from page 29)

automotive industry. Closer examination of fundamentals, however, brings to light numerous objections which far outweigh the possible advantages.

The highway system of the United States is an achievement of such magnitude and such fundamental public importance that it never could have been developed by private interests; public support and public cooperation are essential to its continued progress along constructive lines. And since the benefits of the highways accrue to the public as well as to the motorists, it is fair that the public should bear the major cost of building the roads. In most states at the present time the motor vehicle is paying sufficient special taxes to care for the maintenance and a part of the struction of all the highways at present needed.

The installation of a toll road in one section is likely to make some taxpayers in adjoining areas say: "Why should we pay taxes for building highways here when tolls are being collected to pay for them next door?" Thus the progress of the national road-building program over a period of time might be seriously handicapped. The answer to the question just asked, of course, is that private capital never could take care of the real highway needs.

Then, too, there is the matter of profitability of toll roads. In this respect, the situation is different from that as regards toll bridges. While toll bridges have proved immensely profitable, it is highly unlikely, according to experts, that toll roads can be made profitable. Even on much traveled routes between centers of populations, surveys indicate that a large proportion of the traffic is local in character; this local traffic would not be likely to use the toll road. The remaining through traffic, students say, would not pay for the cost of building and maintaining the highway.

The difficulty here, of course, is the danger of investors becoming too enthusiastic about profit possibilities before going into the matter thoroughly. The profit in such cases would be likely to accrue more to the original promoters of the idea than to those who permanently held the securities with which the road was financed.

The whole matter of toll roads lately seems to be getting mixed up with that of express highways. Proposals being made in Congress for investigation of the feasibility of construction of express highways have been interpreted by some automotive representatives as an entering wedge for the establishment of toll highways. The sponsors of the legislation in Congress disavow any such idea, but there can be little doubt that in the minds of some representatives supporting the investigation idea is the thought of toll roads as at least one possible alternative method of financing.

That the time will come—and has already arrived in some instances—when express highways will be necessary between large population centers, seems almost certain. But when that time comes, highway authorities contend, these highways will be part of the economic need of the communities and states which they serve and thus properly will be a part of the regular governmental road development plan. The use of Federal aid on such highways will remove from the committees through which they run half of the burden of their construction—a fair proportion in view of the fact that through traffic would make large use of these particular roads.

The attitude of automotive industry on this important question is fairly well summarized in the words of H. H. Rice, chairman of the N.A.C.C. tax committee, when he says: "The free use of the public highway is a fundamental principle of government.

"Motor vehicle owners of the United States through special taxes are today largely meeting the costs of the construction of these highways.

"So-called express highways are simply a step in the further improvement of our public highway system which will be found necessary in those localities where traffic is heavy and congestion great.

"The National Automobile Chamber of Commerce, therefore, opposes any effort to place control of any part of the public highways in the hands of private promoters, and this body emphatically supports the principle that the public highways shall be kept forever free to the general public."

Are There Service Flies in Your Sales Ointment?

A DISTRIBUTOR or dealer will sometimes get a selling drive to start with a bang. Then it slows up. Sales resistance increases and no one seems to know what is at the root of the trouble.

About two years ago the manager of the Begg Motor Co., Ltd., of Vancouver, British Columbia, suspected that something of this sort was obstructing sales. He decided to hire a salesman who would promise never to take an order. His job would be to call on present owners, make sure that they were satisfied or stay with them until they were.

The man who was eventually selected for the job was G. A. Innes, of Brandon, Manitoba, Canada. Innes found that the cars, which were Cadillac, Chevrolet and Nash, were being serviced properly. Adequate service, however, should take into consideration the peculiarities of the owner as well as those of the vehicle, and here Innes found plenty of work to do.

The nature of his work is best illustrated by citing a typical case. An elderly gentleman had purchased a Chevrolet and two or three days later began to knock

the car. Everything was wrong with it, according to this owner. Soon the salesman began to report that they could not even get a courteous interview when within range of the old man's influence.

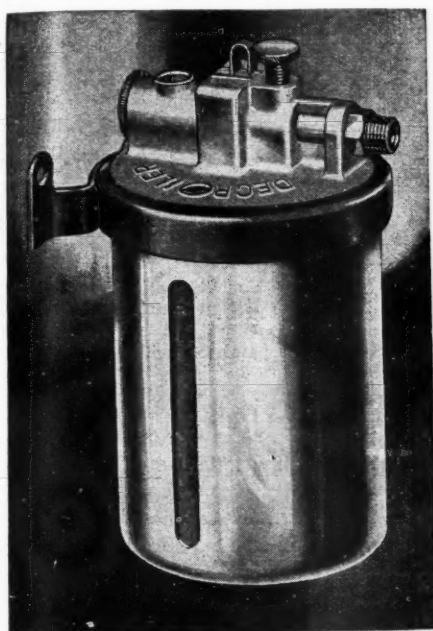
It took Innes half a day to solve the problem, and for the first hour or two he did nothing but listen. Finally the truth came out. The car purchased was a 1926 model but the instruction book covered the 1925 car. The owner was mechanically inclined and wanted to work on the car himself. Accordingly he was very much enraged when the description of the car as given in the book did not correspond with construction of the car he had purchased.

Innes supplied him with the proper instruction book, pointed out features of construction of the 1926 model which were superior to those of the 1925, and figured he had made a friend for the Begg Motor Co. He was quite sure of it when the old gentleman stopped his knocking tactics and then tried to atone by turning in the names of three prospects with whom he said he would use his influence.

The Latest in Accessories

Engine Lubricator

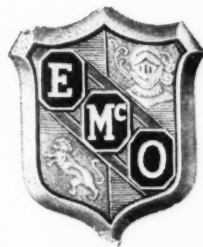
THE Decro-Oiler is made for the purpose of lubricating upper cylinder walls, upper piston rings and valves in an engine. Furthermore, it is said



that the device prevents the formation of carbon deposit. The Decro-Oiler operates by vacuum to the intake manifold, introducing a special penetrating oil into the cylinders that thoroughly lubricates the upper part of the engine. This device comes complete, ready to install. It consists of the oil reservoir, oil feed mechanism, and copper tubes and plugs for connecting to the intake manifold. Used in connection with this accessory is Decro-oil, a green oil made especially for this particular service. This product is made by Decrow Automotive Specialties, Inc., Lockport, N. Y. The list price is \$8.50.

Monograms for Cars

THE Universal Monogram Co., 4424 Broadway, Chicago, Ill., has brought out a new type of monogram



for automobiles. These little monograms are wrought out of solid nickel

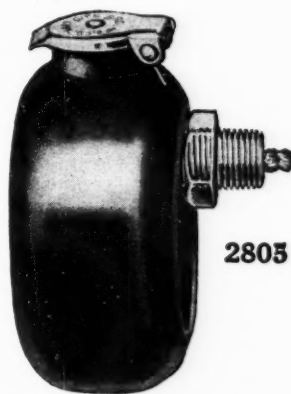
silver. Each crest has diamond-shaped spaces for small black enamel letters which are furnished in assorted lots. These crests are either gold or silver electro-plated, enameled and burnished. The installation is most simple. The crests are cemented in place on the car door with a special metal cement which is guaranteed to outlast the car. There are two styles of Universal monograms, the Standard, which is for the larger cars, while the Junior is intended for the smaller models. Eighteen pairs of assorted crests and 200 assorted initials, sell to the dealer for \$33.50. With this assortment is loaned a display frame showing actual samples of the crests as they would appear installed. The selling price is \$3.50 a pair—\$5, installed. Automobile dealers may obtain a sample by sending in initials and \$1 for one pair.

Gasket Case

The Victor Mfg. Co. of Chicago is supplying a steel case 5 in. by 13 in. by 32 in. long for keeping manifold gaskets where they may be readily found. Forty fibre dividers all properly labeled are provided for keeping the stock in order. This case may be had either with or without a stock of gaskets.

Wick Oiler

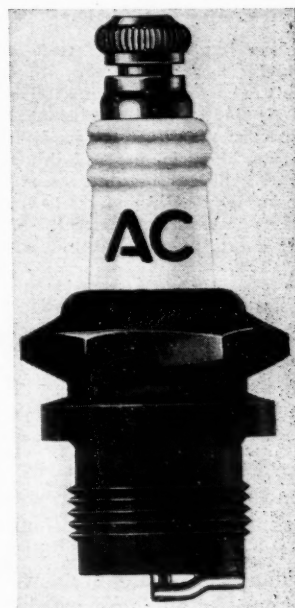
THE Style WB automatic wick feed oiler, made by Gits Bros. Mfg. Co., Chicago, Ill., is used for automobile chassis lubrication. It is also equally



adaptable to all kinds of machinery where slow, even oil feed is necessary. The wicks in this oiler prevent any foreign matter from getting to the bearings and maintain a uniform flow of oil so long as the cup is filled. As will be seen, this cup is easily filled through the spring-type cap on the top. The cup is constructed of steel.

Heavy-Duty Spark Plugs

TO stand up under the severe strain of operating in buses and trucks, the AC Spark Plug Co., of Flint, Mich., has brought out a new type long-life



spark plug. This is made in 7/8 in., 18-thread size and is of unusually heavy construction.

Tow Line

A POWERFUL steel line that can pull a 2-ton car up a 20 per cent grade briefly describes Baseline Autowline, a product of Broderick & Bascom Rope Co., St. Louis, Mo. This is a compact line 15 ft. in length, supplied with two rope slings that protect both the car and the line from damage. By means of the snaps supplied with the line it can be quickly attached or removed from the car. The compactness of this product makes a strong appeal to the motorist who realizes that he



really should carry a tow-line, but has hesitated because of the bulk involved.

READERS' CLEARING HOUSE

Questions Answered By C. Edward Packer

Aligning Rickenbacker Front Wheels

We have just received in trade a 1924 Rickenbacker 8-cylinder sedan. We noticed that the tire on the right front wheel is worn excessively and on checking up the alignment find that the wheels toe out $\frac{1}{2}$ in. We wish to toe these in, but find that the tie rod on this Rickenbacker has no means of adjustment. Kindly let us know how we can line these wheels up properly.—P. R. Schmaltz, care of H. Schmaltz & Co., Kennett Square, Pa.

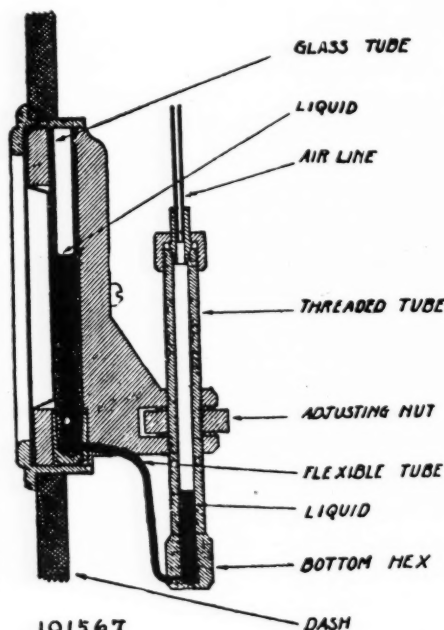
THE adjustment on the tie rod is not very conspicuous, but is located inside of each end of the tie rod. To gain access to it withdraw the cotter key at each end of the rod and unscrew the large threaded plug. It will then be possible to remove the tie rod from the ball and then to withdraw the block in which the ball operates. Behind this block is a stiff coil spring and behind the spring you will find some shims. By adding more shims behind this spring you will be able to make the wheels toe in. These wheels should toe in $\frac{1}{4}$ to $\frac{3}{8}$ in. You will have to experiment and find out the number of shims required in order to obtain the correct adjustment.

Servicing the K-S Telegage

Please advise me how to repair the K-S Telegage as used on the Oldsmobile.—Illinois Subscriber.

TO explain the action of this gage we are showing a cross-sectional view of it. The liquid is raised or lowered due to the pressure transmitted in proportion to the amount of gasoline in the tank. If you have lost this liquid you can get some by writing to the King Seeley Corp., 2450 S. Michigan Blvd., Chicago. To refill the gage first connect the air line holding the threaded tube with a wrench at the bottom of the hex. New liquid may be put into the gage at the top of the threaded tube with a medicine dropper. It may be either filled when on the dash or it may be removed and held in an upright position. If the gage is removed it should not be tilted even when there is no liquid in it as the wire shims may be lost from the threaded tube. If the shims drop out they should be replaced, as the accurate reading of

the gage depends upon their being there. The gage should read "O" empty when it is in place on the dash. A slight adjustment of the reading of the gage may be accomplished by turning the adjusting nut.



Section of K-S Telegage

Before connecting the air line to the gage, it should always be blown out with compressed air. If compressed air from a tank is used, care should be taken not to use air which contains moisture as this moisture will collect in the air line and prevent correct reading of the gage. A very satisfactory way of blowing out the air line is by means of a tire pump; this gives as much pressure as is required and the air is free from moisture. Blowing through the air line with the mouth does not give sufficient pressure.

If the gage shows a reading above zero, but fails to register accurately even when the engine is running, it indicates that gasoline is in the air line. In such cases detach the air line from the gage and blow out the air line as previously mentioned.

If the gage fails to register or, if it reads correctly while the engine is running and then drops down and shows too low a reading after the engine stops,

it indicates a leak in the air line. This trouble in most cases may be remedied by tightening the nuts at the end of this air line.

If the gage shows a reading much below zero after the air line has been disconnected, it may be due to a leak in the gage itself.

Locating Exhaust Leak

I have an Oldsmobile which is a Model 30-E that seems to have a leak in the exhaust pipe but we have not been able to find it. What do you suppose this could be?—Illinois Subscriber.

THE best way to check for this leak is to place the car in bright sunlight. Disconnect the suction line to the vacuum tank and pour oil into the line. This will cause the car to throw a heavy blue smoke, and by carefully looking over your entire exhaust line and muffler you can see if there are any leaks in it, as blue smoke would be coming out.

To Figure Speedometer Gearing

If a car has a 30 in. tire and a 4.73 to 1 gear ratio, which is the correct speedometer gear ratio, a 13 to 4 or a 16 to 5? The speedometer cable has to turn 1008 r.p.m. to read correctly at 60 m.p.h.—Fred L. Cannon, Champaign, Ill.

A 30-IN. TIRE makes 672 revolutions per minute when going 60 miles an hour. This would give your driveshaft or engine a speed of 3178 r.p.m. with a gear ratio of 4.73 to 1. The speedometer shaft would turn 993 $\frac{1}{2}$ r.p.m. if you use the 16 to 5 ratio and 978 r.p.m. if you use the 13 to 4 ratio. Consequently, the 16 to 5 ratio is the more nearly correct and in fact is probably as accurate as any speedometer.

If the gear ratio on this car were changed to 12-tooth pinion and 53-tooth ring gear, what should the speedometer gear ratio be to make the speedometer read correctly at 60 m.p.h., taking into consideration the information previously given?

IN using a 12-tooth pinion and a 53-tooth ring gear, you have a gear ratio of 4.41 to 1. This will give you an engine driveshaft speed of 2963 r.p.m. Using a speedometer gear of 17 to 6 will be close enough for all practical purposes, but the speedometer

[READERS' CLEARING HOUSE]

will over-register slightly. It would be our suggestion that you take up problems of this nature directly with the speedometer factory, as they are prepared to tell you just what gearing you should use and what they have available.

An Oil Gusher

I would appreciate the following information. I have a 1927 Pontiac throwing oil out through the timing gear housing at the front end of the crankshaft. I have had the timing gear cover off and examined the oil-retaining washer and could not find anything wrong there. I reassembled and the car continues to throw the oil as badly as before. This oil comes out of the timing gear housing, gets on the fan pulley and is thrown over the hood and fenders.—Mallory's Garage, Georgetown, Ky.

ONE cause of blowing out of oil at the front of the engine is a clogged oil screen in the breather cap. You would do well to clean this screen out thoroughly before attempting anything else. If you find that the oil continues to leak at the front end of the engine, after having cleaned the screen, proceed as follows: Remove the timing gear cover and solder the crimped ring to the cover. Some of these leak oil between this ring and the cover. At the same time look to see that the ring is not cracked, for a crack in the ring would permit oil to leak through. Then before reassembling the job, place a fibre washer on the crankshaft behind the oil slinger. This washer should be between .030 and .050 in. in thickness. Pushing the oil slinger closer to the cover, as it does, prevents the oil from working out through this opening.

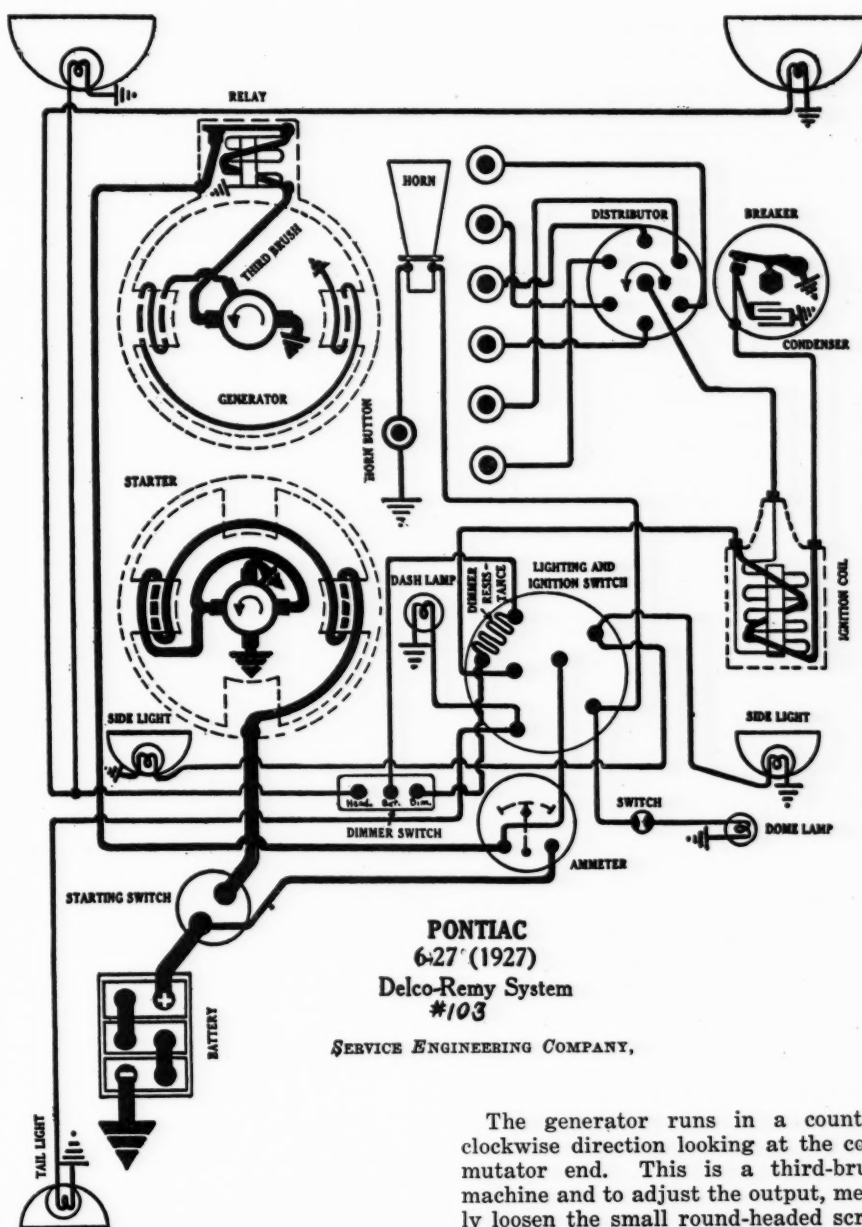
Boosting Oil Pressure

On a Model MX Jordan where is the oil pressure regulator located and how is it adjusted?—Circuit Electric Co., 1218 Wellington Ave., Chicago, Ill.

ON this car the regulator is located at the left front of the engine at the timing gear cover. Screwing in on the adjustment increases the pressure. The pressure should reach a maximum of 45 lb. at high speed with the engine thoroughly warm. You do not mention what the condition of the engine is but if the pressure has been slowly dropping, we suspect that the bearings are loose. The correct thing to do then would be to adjust the bearings to bring up the pressure rather than to screw in on the adjustment.

Electrical Data on 1927 Pontiac

I would appreciate very much your supplying me with a wiring diagram and electrical information on a 1927 Pontiac car. Should there be any charge for this service, kindly



PONTIAC
6-27 (1927)
Delco-Remy System
#103
SERVICE ENGINEERING COMPANY.

let me know the amount and I will forward you a check at once.—J. R. Gobble, Thomas & Son, Inc., Fairfield, Iowa.

IN line with your request we are showing herewith the wiring diagram of the 1927 Pontiac. The breaker contacts on this car should separate .020 to .028 in. The spring tension at the contact should be 15 to 20 oz. This distributor is of the full automatic type, the advance starting at 400 engine r.p.m. and reaching its maximum advance at 1800 r.p.m. The starter runs in a counter-clockwise direction and is connected with the engine by means of a Bendix drive. The brush tension should be 20 to 28 oz. on each brush. When the starting motor is being tested without load; it should run between 4500 and 5000 r.p.m. at 5 volts and draw between 65 and 70 amps. When locked, it should draw between 450 and 475 amps. at 3.6 to 3.7 volts, and the torque should be 10 to 12 lb. on a 1 ft. arm.

The generator runs in a counter-clockwise direction looking at the commutator end. This is a third-brush machine and to adjust the output, merely loosen the small round-headed screw on the generator end plate. Then remove the commutator cover band that shifts the third-brush mounting arm in a counter-clockwise direction to increase the charging rate, and in the opposite direction to decrease the charging rate. The maximum output is 17 amps. with the generator cold. This output should be reached at 1600 r.p.m. For test purposes the following generator information is given:

Amperes	R.P.M.
7	850
15-17	1600
11	2500

The information just given applies to generators that are at room temperature. When the generators are thoroughly heated by running, you will find an output of 11 amps. at 1800 r.p.m. is normal.

The shunt field current is 5 amps. at 6 volts.

[READERS' CLEARING HOUSE]

Runs Out of Gas When Wide Open

I have a Chrysler 60, 1926 Model. I can take this car and drive it with wide open throttle and it will run 65 m.p.h. for a couple of miles and then die down to 45 or 50 and spit through the carburetor. My opinion is that it isn't getting gas enough. The gas line, vacuum tank and carburetor seem OK. This car will run 70 m.p.h. when everything is right. Would a Red Head still increase its speed and efficiency?—W. Donald Maurer, Spencer, Iowa.

THE trouble that you are having is that you are running out of gas in the vacuum tank. This is caused by the wide open throttle which destroys the vacuum in the intake manifold. To eliminate this trouble the only thing you can do is to occasionally take your foot partly off the throttle and to permit the vacuum tank to suck up another load of gas. Of course if you are going to use this car continuously with the throttle wide open, it would probably be better to put on a gasoline pump. There is reason to believe that you would get even better performance and economy with a Red Head. This would not, however, eliminate the gasoline trouble that you are having.

Loose Bearings Reduce Oil Pressure

I have a question that I'd like to put to you and on which we cannot agree. It is: Will the oil pressure go down on a Whippet Four if a connecting rod comes loose? And, if so, how much?—G. H. Wenzel, The Motor Inn, Peever, S. Dak.

THE oil pressure will go down. Just how much it will go down depends on the quality of the oil and temperature and how loose the bearings get.

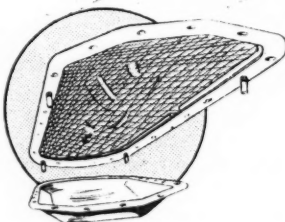
Adjusting Rear Axle

I would like to know how to make the end adjustment on the rear axle drive pinion on a 1923 Cadillac.—Nebraska Subscriber.

WE are showing a sectional view of the rear axle in question. To adjust the pinion loosen the six screws designated as "I." Turn the adjusting

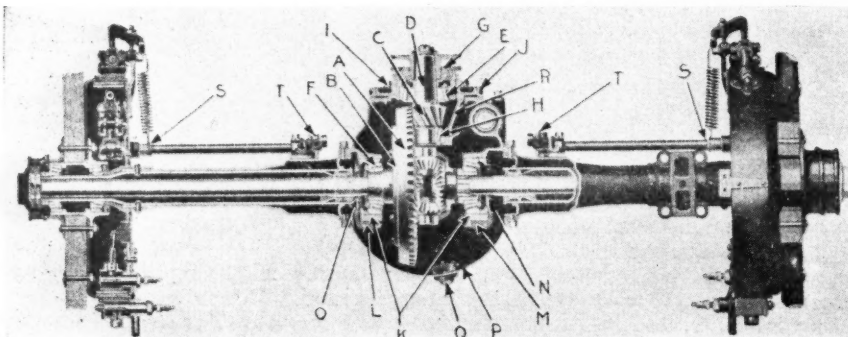
SHOP KINKS
Ideas that have proved useful

WHEN working on a Ford that has the front end hoisted up, I find that it is sometimes hard to get the lower pan back in place. This is due to the U-shaped reinforcement sliding back into the crankcase. To hold these in place I have taken a couple of bottom-pan cap screws and sawed their heads off. Before attempting to put the pan back in place I run these headless cap screws into place. This holds the U-shaped pieces and makes it easy to put the pan on.—P. R. Roaming, Frazee, Minn.



Readers of MOTOR AGE are invited to submit ideas that they have found useful in doing some particular service job in the shop in a better or quicker way. For each one published \$2.00 will be paid. Whenever possible the idea should be accompanied by a sketch or diagram from which a drawing can be made.

ring "J," moving the pinion in either direction as required. A clockwise motion of the locking ring moves the pinion away from the ring gear and a counter-clockwise rotation moves the pinion toward the ring gear. When the adjustment is finished be sure to secure the six locking screws "I." Some of the type 61 rear axles are provided with adjusting shims or washers under the flange of the pinion cage, instead



of the adjusting rings "J." These washers come in various thicknesses. To adjust the pinion on these axles substitute washers of different thicknesses.

Valves in Head

We would greatly appreciate your advising us what types of motors are most generally used in airplanes. For instance, we mean the L-head or the valve-in-head type. Can you advise us if the Wright Whirlwind motor has two valves in the head or if it has one valve in the block and one in the head for each cylinder? Also advise us if the Curtis and the Liberty are of the valve-in-head or L-head type motor and, also, whether or not the Junkers uses a valve-in-head motor. You undoubtedly know that the latter is a German-made motor. We assure you that this information will be greatly appreciated.—DeBroux Auto Sales Co., Sawyer, Wis.

ALL of the engines that you mention, the Wright, Curtis, Liberty and Junkers are valve-in-head engines. All of them have both valves in the head, that is, none is of the F-head type.

From time to time different valve arrangements have been tried but evidently in aviation practice valve-in-head arrangement has very definite advantages in one way or another.

20 Amp. Discharge is Right

When the ignition is turned on on a 1922 Model MX Jordan that has no cut-out on the generator, what amount of discharge should show on the ammeter?—Circuit Electric Co., 1218 Wellington Ave., Chicago, Ill.

ON this car the discharge is about 20 amp. as the current is flowing through the generator as well as through the ignition system when the ignition switch is turned on.

Curing Franklin Oil Leak

We have a Model 10-C Franklin which leaks oil around the front crankshaft bearing at speeds above 35 m.p.h. We would like your opinion on what causes this leakage.—J. J. Landis, 511-515 E. Main St., Olney, Ill.

THE front case of the engine clears the crankshaft by a very small margin. Oil accumulating between the crankshaft and the case is drawn into the cooling system of the engine by the fan on the crankshaft. To overcome this trouble remove the cooling fan housing cover and the cooling fan housing on the front of the engine. When the cooling fan housing is removed, exposing the timing chain, take a 1/8 in. drill and drill three or four holes running diagonally from the bottom of the crankshaft opening in this cover back into the engine. This will provide an oil drain which is quite effectual in preventing the escape of oil at the front of this engine.

READERS' CLEARING HOUSE

Too Much Heat

I would like to get some information on a 1927 Hudson Super-Six that is eight months old. This has been in my repair shop four times in the last five months, each time with the exhaust manifold cracked in the middle. Each time this came in I put on new manifold, new gaskets, looked the engine over and could not figure out what could be causing this trouble. The customer states that the breaking of the manifold takes place when the engine is first started up.—Henry A. Martin, 538 W. Roosevelt Road, Oak Park, Ill.

MANIFOLD breakage is increased as a result of the driver leaving the heat control in the "hot" position after the engine has warmed up. Another and contributing cause of breakage, is unevenness of the surfaces of the manifold or cylinder blocks. The next time this car is in we would suggest that with the manifold off you check to see that all of the surfaces against which the manifold mounts are in perfect alignment. Also check the manifold to be sure that its surfaces are in line with each other. To give a little greater cushioning effect to compensate for any extreme expansion, you might find it advantageous to put on an extra gasket or two. However, as we said before, the most likely cause of this breakage is due to running with the dash control set in the "hot" position and not returning it after the engine has warmed up.

Measuring Valve Stem Clearance

Can you tell me the best method of renewing, or rather replacing completely the valve stem guides on a Buick Model 24-6? How much clearance should there be between the valve stem and the guide? How do you take these measurements? If a valve stem reamer reams too large a hole, what must be done to make it ream a smaller hole?—Joseph Jankoviak, 820 Avenue D, Rochester, N. Y.

THE valve guides in your cylinder head can be driven out and new guides driven into place. These new guides are reamed to just a little under standard size so that they would probably be satisfactory with valves that are worn a very little. However, if you are putting in new valves, and it would probably be better to, you will need to ream these new guides. If you find that your reamer makes too large a hole, there is no alternative but to get a smaller reamer, for it would hardly be desirable to have your present reamer ground under size. The fit of a valve in a guide is measured by means of oversize stems. You should have an oversize stem or plug gage that is exactly .002 in. greater in diameter than your new valve stems. This

should be a snug push fit in the guide and if it is you will appreciate that your new valve will then have the necessary .002 in. clearance.

60-40 Brake Pressure

On a 1927 model Oldsmobile how is the braking pressure apportioned?—Illinois Reader.

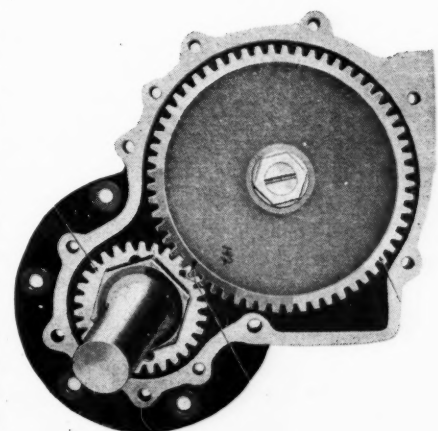
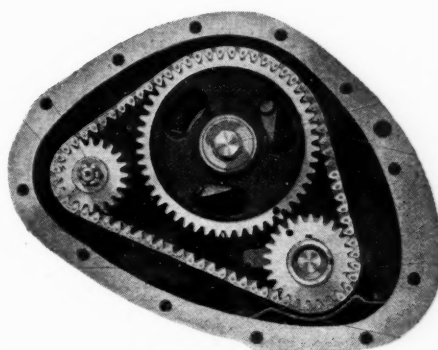
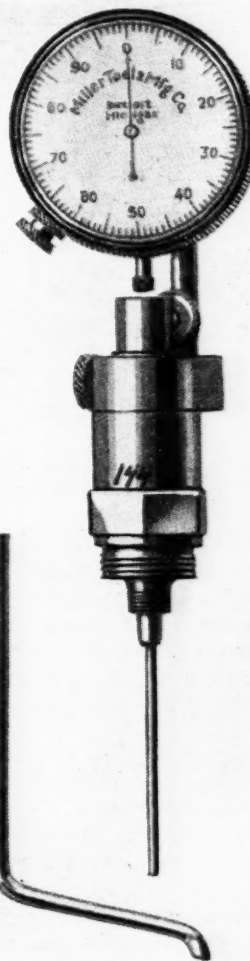
THE front wheels receive 40 per cent of the braking pressure and the rear wheels 60 per cent.

Timing Chrysler 52 and 58 Camshaft and Valves

I would like to have you send me the correct way of timing the camshaft and valves on the Chrysler 52 and 58 and also the six-cylinder Chrysler. Please explain this to me just as if I had to put new timing gears in.—Maurice Stroud, Winchester, Ky.

TIMING gears were used in the Models 58 and 50 Chrysler and are now used in the Model 52. These gears should be so installed that the punch marks as shown in the illustration will be in line with each other. While the illustration shown is that of the old Model 50 Chrysler the method of gear meshing is identical on all the four-cylinder cars.

On all the six-cylinder cars the method of lining up the camshaft and crankshaft sprockets is the same. That is, the punch marks on the camshaft gear should be directly in line with the



punch mark on the crankshaft gear, as shown in the illustration.

To check the valve timing the valve tappets should be adjusted while the engine is cold so that there is .008 in. of clearance for both the intake and the exhaust. This clearance is necessary when checking the timing but should be changed to .006 in. for the exhaust and .004 in. for the intake when the engine is warm. The crankshaft should be rotated until No. 4 piston is coming up on the compression stroke and stopped when the piston is .004 in. past top dead center. The ignition is timed with the aid of the dial gage, as illustrated. In the four-cylinder cars this dial gage is installed through the spark plug hole and uses the offset extension arm which makes contact with the top of the piston.

In the six-cylinder cars there is 1/8 in. iron pipe plug over No. 6 piston. This plug is removed and a gage like the one shown is screwed directly into the plug opening. The timing is as follows:

Model	Red Head Engine	Regular Engine
50-52-58	.004 before T.D.C.	.060 before T.D.C.
60-62	.015 before T.D.C.	.030 before T.D.C.
70-72	.002 before T.D.C.	.087 before T.D.C.
80	Top dead center	.046



Another Kind of MOTOR AGE Impression

WATERTOWN, WIS.—I have been a reader and subscriber to MOTOR AGE for many years and have always been impressed with the helpful articles published, and particularly the individual help you have given to the dealers' individual problems.—Aug. Busshardt.

A Race-Starved Race Those Iowans

MT. PLEASANT, IOWA—Your magazine, MOTOR AGE, is the best ever. Let's have lots of racing dope and plenty of pictures for dessert, because we Iowans are kind-of-race-starved.—Don Carper.

He Likes the Advertising Firsts

SALT LAKE CITY, UTAH—I have been interested in reading copies of old advertisements that were run by manufacturers in the early days which have been reproduced in MOTOR AGE recently.—Frank Botterill, the Botterill Automobile Co.

LETTERS to the editor from those whose "attention has been called"; from those who point with pride and those who view with alarm, from those who are easy to please and those who are hard to please; from those who are happy when they find a good thing and those who are happier when they find something they consider not so good; from those who boost and those who knock; from those who see the doughnut and those who see the hole; in other words, Dear Subscriber, from you and you and you—as well as from the man who borrows your copy of MOTOR AGE or reads it over your shoulder.

Getting Better and Better, Hall of the Time

CANTON, OHIO—I enjoy reading MOTOR AGE very much. It gets better all the time.—George O. Hall.

We're Inclined to Agree

MELBOURNE, KY.—I am a reader of MOTOR AGE and I think it can't be beat for a motor magazine.—M. Hans Opel.

Maybe a Nifty Stand Would Earn the Home

INDIANA HARBOR, IND.—Those nifty looking filling stations which you showed pictures of not long ago, gave me a good laugh. I'm in the business and John D. will have to give his gas away before I'll be able to afford a home for my family as good looking as any one of those stations. Give my regards to the architects.—F. F.

Next to Eating George Likes Reading MOTOR AGE

MANTUA, N. J.—I could not miss a single copy of MOTOR AGE. I look for it every week and to miss a copy is like missing a meal.—George P. Pinzka.

By Set-Up They Mean a Treat

DECATUR, ILL.—We failed to receive our MOTOR AGE. Won't you see the back issue reaches us. We can't do without the weekly set-up MOTOR AGE gives us.—Tenney & Company.

An 18-K Nifty From



a Factory Executive

SOUTH BEND, IND.—I have been a reader of MOTOR AGE for some 18 years and have always held your publication in high regard. It has also been my impression that it was widely read by the automobile fraternity, but this fact has been brought home to me with full force in the last 30 days. I have been traveling extensively and in almost every city I visited, some mention was made of the article which you wrote in your Feb. 9 issue in reference to the talk I made before the National Automobile Dealers Association in Chicago.

You are doing a particularly worthwhile job at the present time in the forceful way in which you are calling attention to the fact that the automobile industry as a whole has a real fight on its hands if it is to keep getting the share of the customer's dollar which has been obtained in the past. Other industries have been keenly aware of the appeal of the motor car and have planned their selling campaigns accordingly. Our industry must recognize this issue and meet it if progress is to continue.—Paul G. Hoffman, Vice-President, The Studebaker Corp. of America.

Prices, Weights and Equipment of Current Passenger Car Models

Important Changes in Specifications and Price Tables since last issue:

Graham-Paige "835" Prices

Star "4" changed to Durant "Four"

Passengers and Model					F.O.B. Price	Doors	Shipping Weight	Standard Equipment							
CADILLAC "341"															
"Fisher"															
2-4p. Roadster	...	\$3350	2	4590	aeghlmpnx										
5p. Phaeton	...	3450	4	4640	aeghlmpnx										
5p. Sp. Phaeton	...	3950	4	5125	Beghiklmprx										
7p. Touring									3450	4	4630	aeghlmpnx			
2-4p. Coupe									3295	2	4820	aeghlmpnx			
2-4p. Conv. Coupe									3495	2	4665	aeghlmpnx			
5p. Coupe									3495	2	4760	aeghlmpnx			
5p. Sedan									3595	4	4880	aeghlmpnx			
5p. Town Sedan									3395	4	4875	aeghlmpnx			
7p. Sedan									3695	4	4965	aeghlmpnx			
5p. Imp. Sedan									3745	4	4925	aeghlmpnx			
7p. Imp. Sedan									3895	4	5025	aeghlmpnx			
5p. Imperial Cab									3745	4	4925	aeghlmpnx			
7p. Imperial Cab									3895	4	5025	aeghlmpnx			
"Fleetwood"															
5p. Sedan									4095	4	4995	aeghlmpnx			
5p. Sedan Cab									4095	4	4995	aeghlmpnx			
7p. Sedan									4195	4	5080	aeghlmpnx			
7p. Sedan Cab									4195	4	5080	aeghlmpnx			
5p. Imperial									4245	4	5035	aeghlmpnx			
5p. Imperial Cab									4245	4	5035	aeghlmpnx			
7p. Imperial									4445	4	5135	aeghlmpnx			
7p. Imperial Cab									4445	4	5135	aeghlmpnx			
Town Cab Con.									5000	4		aeghlmpnx			
Town Cab Con.									5500	4		aeghlmpnx			
Lim Bro'm Con									5500	4		aeghlmpnx			
CHANDLER															
"Big Six"															
7p. Touring									\$1725	4	3360	ahjlmnw			
5p. Met. Sedan									1525	4	3570	ahmnt			
4p. Coupe									1725	2		ahmnt			
3p. Ctry. Club									1725	2	3535	ahmnt			
7p. Sedan									1925	4	3895	ahmnt			
5p. Royal Sedan									1725	4	3800	ahmnt			
3-5p. Cabriolet									1825	2	3450	ahmnt			
"Spec. 6"															
5p. Touring									995	4	2575	ahn			
5p. Sedan									995	4	2810	ahn			
"Spec. In. 6"															
5p. Touring									1085	4	2575	ahn			
3-5p. Roadster									1155	2	2470	ahnw			
5p. Sp. Touring									1165	4	2730	ahnw			
3-5p. Cabriolet									1215	2	2705	ahn			
3p. Coupe									1035	2	2675	ahn			
5p. Sedan									1085	4	2830	ahn			
5p. DeL. Sedan									1155	4	2830	ahlat			
3-5p. Coupe									1155	2	2735	ahn			
"Roy. St. 8"															
7p. Touring									1995	4	3655	ahjlmnpwx			
4p. Coupe									1995	2	3640	ahmntpx			
4p. Ctry. Club									1995	2	3640	ahmntpx			
5p. Sedan									1995	4	3900	ahmntpx			
7p. Sedan									2195	4	3950	ahmntpx			
3-5p. Cabriolet									2095	2	3600	ahmntpx			
5p. DeL. Sedan									2195	4	4005	Bhilmnpox			
CHEVROLET															
2p. Roadster									\$495	2	2030	dr			
5p. Touring									495	4	2090	dr			
5p. Coach									585	2	2360	dhr			
2p. Coupe									595		2235				
5p. Sedan									675	4		dhr			
2-4p. Cabriolet									665	2	2270	dhr			
5p. Imp. Land									715	4	2405	dhr			
CHRYSLER "52"															
5p. Touring									\$605	4	2110	ahr			
2-4p. Roadster									670	2	2080	ahr			
2p. Club Coupe									670	2	2180	ahr			
5p. Sedan									670	2	2300	ahr			
5p. Sedan									720	4	2365	ahr			
2-4p. DeL. Coupe									720	2	2240	ahr			
5p. DeL. Sedan									790	4	2365	ahr			
"62"															
5p. Touring									1095	4	2740	aghr			
2-4p. Roadster									1075	2	2705	aeghrw			
2p. Bus Coupe									1065	2	2780	aghr			
5p. Sedan									1095	2	2855	aghr			
5p. Sedan									1175	4	2905	aghr			
2-4p. Coupe									1145	2	2855	aghr			
5p. Land. Sedan									1235	4	2940	aghr			
"72"															
2-4p. Roadster									\$1495	2	3005	aeghlmpnx			
2-4p. Sp. Rdstr.									1595	2	3005	aeghlmpnx			
4p. Coupe									1595	2	3155	aeghlmpnx			
2-4p. Coupe									1545	2	3140	aeghlmpnx			
5p. Roy. Sedan									1595	4	3275	aeghlmpnx			
5p. Town Sedan									1695	4	3280	aeghlmpnx			
2-4p. Con't Coupe									1745	2	3135	aeghlmpnx			
5p. Crown Sedan									1795	4	3270	aeghlmpnx			
7p. Town Cab									3595	4	3485				
Imp. "80"															
2-4p. Roadster									2795	3	3870	aeghlmpnx			
5p. Sedan									2945	4	4125	aeghlmpnx			
7p. Sedan									3057	4	4250	aeghlmpnx			
5p. Town Sedan									2995	4	4140	aeghlmpnx			
7p. Sedan Lim									3495	4	4285	aeghlmpnx			
CUNNINGHAM															
"V-7"															
7p. Touring									\$6650	4	4600	Ceghiklmnp			
4p. Sp. Touring									6150	4	4500	Ceghiklmnp			
4p. Coupe									7600	2	4700	Ceghiklmnp			
6p. Limousine									8100	4	5000	Ceghiklmnp			
DAVIS "99"															
4p. Polo Rdster									\$1885	2	3095	aeghlmpnx			
5p. Touring									1885	4	3125	aeghlmpnx			
4p. Coupe									1885	2	3145	aeghlmpnx			
5p. Emp. Sedan									1885	4	3275	aeghlmpnx			
DIANA "St. 8"															
5p. Phaeton									\$1635	4	3100	agmna			
5p. Roy. Roadster									1795	2	2995	agmna			
5p. P.B. Rdster									1895	2	2995	Bgmna			
5p. Cab. Rdster									1995	2	3160	agmna			
5p. Collap. Rdster									2195	2	3160	aghlmpnx			
5p. 4d. Sedan									2095	4	3275	aghlmpnx			
5p. 2d. Sedan									1795	2	3170	aghlmpnx			
DODGE BROS.															
"Std. 6"															
2-4p. Conv't Cab									\$945			bhr			
2p. Coupe									875	2		ahr			
5p. Sedan									895	4		ahr			
5p. Sedan DeL									970	4		aeghr			
"Victory 6"															
2p. Coupe									1045	2		aghr			
2-4p. Coupe									1095	2		aghr			
5p. Sedan									1095	4		aghr			
4p. Brougham									1095	2		Bghjnr			
4p. DeL. Bro'm									1170	2		Beghjnrt			
5p. DeL. Sedan									1170	4		aeghnt			
"Senior"															
4p. Cab. Rdster									1595	2	3353	Beghlmpnx			
5p. Sedan									1495		3409	aeghr			
5p. Sedan									1595	4	3421	aeghlmpnx			
4p. Coupe									1570	2	3315	aeghlmpnx			
du PONT "E"															
4p. Roadster									\$2800		3700	afghikmnpnx			
5p. Touring									2800	4	3850	afghikmnpnx			
4p. Coupe									3200		3850	afghikmnpnx			
4p. Conv't Coupe									3400	2	2800	afghikmnpnx			
5p. Sedan									3400		4100	afghikmnpnx			
5p. Con. Sedan									3750	4	4100	Bfghikmnpnx			
"F"															
Phaeton									\$3950						
Sp. Phaeton									4500						
Sedan									4050						
5p. Limousine									4265						
7p. Sedan									4265						
7p. Limousine									4475						
Conv't Sedan									4775						
DURANT															
"Four"															
Roadster									\$495		1955	ah			
Coupe									495		2185	ah			
5p. Sedan									495	2	2260	ah			
5p. Sedan									570	4	2335	ah			
"55"															
2p. Coupe									\$795		2235	ah			
5p. Sedan									795	2	2395	ah			
5p. Brougham									895	4	2425	ah			
"65"															
5p. Touring									795	4	2217	aghlmpnx			
2-4p. Sp. Rdster									1025	2	2300	Beghlkma			
2-4p. Collap. Cab									1045		2420	aghlmpnx			
2-4p. Coupe									975		2305	aghlmpnx			
5p. Sedan									975		2425	aghlmpnx			
5p. Sedan									1075	4	2565	aghlmpnx			
5p. Brougham									1175	4	2495	Beghlkma			
"75"															
5p. Sedan									1385	4	2990	aghlmpnx			
5p. Brougham									1550	4	2360	Beghlkma			
ELCAR															
"6-70"															
4p. Roadster									\$1295	2	2580	ahnr			
5-7p. Touring									1295			ahnr			
4p. Brougham									1295	2	2670	ahnr			
5p. Sedan									1295	4	2750	ahnr			
"8-78" Std															
2-4p. Roadster									1395	2		ahnr			
5p. Touring									1395			ahnr			
2-4p. Coupe									1395	2		ahnr			
5p. Sedan									1395	4		ahnr			
"8-78 Royal"															
4p. Roadster									1495			aeghlmpnx			
5p. Touring									1495			aeghlmpnx			
4p. Coupe									1495			aeghlmpnx			
5p. Sedan									1495			aeghlmpnx			
"8-82"															
5-7p. Touring									1695			aeghlmpnx			
2-4p. Roadster									1695	2		aeghlmpnx			
4p. Coupe									1695	2		aeghlmpnx			
5p. Prin. Sedan									1895	4		aeghlmpnx			
"8-91"															
2-4p. Roadster									1995			aeghlmpnx			
4p. Coupe									2295			aeghlmpnx			
5p. Prin. Bro'm									2295	4		aeghlmpnx			
5p. Prin. Sedan									2295	4		aeghlmpnx			
"120"															
5-7p. Touring									2465	4		Beghlmpnx			
5p. Std. Sedan									2465	4		aeghlmpnx			
7p. Std. Sedan									2565	4		aeghlmpnx			
ERSKINE SIX															
"51"															
4p. Spt. Rdster									\$965	2		Beghlmpnx			
5p. Club Sedan									795	2	2480	aghr			
5p. Sedan									885	4	2545	aghr			
2p. Bus. Coupe									895	2		aghr			
4p. Spt. Coupe									965	2		aghr			
5p. Sedan, Royal									965	4	2545	aghr			
ESSEX															
"Super Six"															
2-4p. Coupe									\$775	2	2535	ahmnr			
5p. Coach									735	2	2560	ahmnr			
5p. Sedan									795	4	2660	ahmnr			
FALCON-KNIGHT															
"12"															
4p. Roadster											2450	gbr			
Touring															
4p. G.G. Rdster											2500	Beghlmpnx			
2-4p. Coupe									1145		2565	gbr			
5p. Sedan									1095	2	2800	gbr			
5p. Sedan									1195	4	2875	ghor			
5p. Landau											2735	ghrtu			

Prices, Weights and Equipment of Current Passenger Car Models

Passengers and Model	F.O.B. Price	Doors	Shipping Weight	Standard Equipment	Passengers and Model	F.O.B. Price	Doors	Shipping Weight	Standard Equipment	Passengers and Model	F.O.B. Price	Doors	Shipping Weight	Standard Equipment	Passengers and Model	F.O.B. Price	Doors	Shipping Weight	Standard Equipment
FORD "A"					HUPMOBILE					LA SALLE					McFARLAN				
2-4p. Roadster... \$ 385 2 Bghnr					"Century 6"					125" W.B.					"Str. 8"				
5p. Phaeton... 395 Bghnr					5p. Phaeton... \$1425 2900 aghr					2-4p. Roadster... \$2485 2 3755 aeghlmnprx					131" W.B.				
5p. Coupe... 495 Bghnr					4p. Sportster... 1435 2 aghr					5p. Phaeton... 2485 4 3770 aeghlmnprx					2p. Roadster... \$5050 2 3400 afghlmnprx				
5p. Tudor Sedan... 495 Bghnr					5p. Phaeton... 1445 4 2940 aghr					5p. Sp. Phaeton... 2975 4 4170 Beghikmnp rsx					5p. Touring... 2650 4 3400 afghlmnprx				
2-4p. Spt. Coupe... 550 Bghnr					6p. Sedan 2d... 1345 2 2975 aghr					2p. Bus. Coupe... 2350 3930 aeghlmnprx					7p. Touring... 2750 4 3450 afghlmnprx				
5p. Fordor Sedan... 570 Bghnr					4p. Coupe... 1385 2965 aghr					5p. Family Sedan... 2350 4090 aeghlmnprx					5p. Phaeton... 3180 4 3450 afghlmnprx				
					6p. Sedan... 1395 4 3040 aghr					2-4p. Coupe... 2450 2 3965 aeghlmnprx					3p. Town Coupe... 3180 2 3650 afghlmnprx				
					2p. Cabriolet... 1475 aghr					2-4p. Conv. Cpe... 2550 2 3890 aeghlmnprx					5p. Sedan... 3180 4 3650 afghlmnprx				
					"Century 125-8"					4p. Victoria... 2550 2 3985 aeghlmnprvx					5p. Brougham... 3180 4 3650 afghlmnprx				
FRANKLIN					5p. Touring... 1795 4 3300 eghnrx					5p. Town Sedan... 2495 4 4065 aeghlmnprx					7p. Town Car... 4600 4 3750 afghlmnprx				
"Series 12"					7p. Touring... 1895 4 3360 beghnrvx					5p. Sedan... 2495 4 4090 aeghlmnprx					136" W.B.				
119" W.B.					2-4p. Roadster... 1895 2 3355 eghnrvx					5p. Town Cab... 4500 4					7p. Sedan... 3680 4 4000 afghlmnprx				
3p. Coupe... \$2625 3390 an					5p. Brougham... 2095 2 3515 j					5p. Trans. Cab... 4700 4					7p. Sub. Sedan... 3780 4 4000 afghlmnprx				
4-5p. Victoria... \$2760 3470 an					2-4p. Coupe... 2195 2 3465 dghrx										"TV6"				
5p. Sedan... 2790 3500 an					5p. Sedan... 2195 4 3545 aghrx					7p. Family Sedan... 2575 4345 aeghlmnprx					2p. Roadster... 5800 2 4300 afghlmnprx				
5p. Or. Sedan... 2815					5p. Victoria... 2195 2 3525 aghnrx					5p. Coupe... 2625 aeghlmnprx					5p. Spt. Tour... 5600 4 4700 afghlmnprx				
5p. Spt. Sedan... 2910 3550 an					7p. Sedan... 2345 4 3360 ehr					5p. Cab. Sedan... 2675 aeghlmnprx					7p. Touring... 5700 4 afghlmnprx				
3-5p. Conv't Cpe... 2925 3450 an					7p. Sedan Lim... 2520 4 3360 aehtx					7p. Sedan... 2775 4 4345 aeghlmnprx					5p. Sedan... 6720 4 5200 afghlmnprx				
					"Century 8"					5p. Imp. Sedan... 2775 4 4315 aeghlmnprx					7p. Sedan... 6720 4 5200 afghlmnprx				
2-4p. Sp. Runab't					5p. Phaeton... 1905					7p. Imp. Sedan... 2875 4 4570 aeghlmnprx					7p. Sedan... 6920 4 5200 afghlmnprx				
5p. Sp. Touring... 2975 3450 an					2-4p. Sportster... 1915										7p. Town Car... 9000 4 5200 afghlmnprx				
7p. Touring... 2975 an					7p. Phaeton... 1935														
7p. Sedan... 3060 3540 an					5p. Sedan... 1825 2 3385														
7p. Or. Sedan... 2980 3700 an					4p. Coupe... 1865														
7p. Limousine... 3015 3700 an					5p. Sedan... 1875 4 3455														
3080 3780 an					2-4p. Cabriolet... 1955 3345														
GARDNER					JORDAN					LINCOLN					MARMON				
"75 Std."					"R"					"8"					"68"				
4p. Roadster... \$1195 2 2995 afhmnr					4p. Blue Boy... \$1495 4 2800 Bceghkmnrx					2p. Spt. Rdstr... \$4600 2 4930 aegklnprx					2p. Roadster... \$1495				
5p. Sp. Coupe... 1295 2 3290 afhjmnr					4p. Spt. Salon... 1295 2 2755 aghlmnrx					2-4p. Club Rdstr... 4600 5010 aeghklprx					5p. Sedan... 1395 4 2897 ahmnr				
4p. Vic. Coupe... 1295 2 3290 afhjmnr					2-4p. Tomboy... 1395 2 2670 aghmnrx					7p. Spt. Touring... 4600 4 4940 aegklnprx					4p. Vic. Coupe... 1450 2867 ahmnr				
5p. Club Sedan... 1390 4 3265 afhmnr					5p. Sedan... 1395 4 2775 aghmnrxt					4p. Spt. Phaeton... 4600 4 4910 begiklnprvx					2p. Coupe... 1395 2887 ahmnr				
5p. Std. Sedan... 1495 4 afhmnr					"JJ"					4p. Coupe... 4600 2 4805 aegklnprx					"78"				
					4p. Playboy... 1845 2 2915 aghmnrx					4p. Sedan... 4800 4 4930 aegklnprx					2-4p. Roadster... 1895 2 3007 anlmnprvx				
					2-4p. Sp. Coupe... 1895 2 3070 aghmnrx					5p. Sedan... 4800 4 5010 aegklnprx					4p. Speedster... 1965 4 3052 ahlmnrwx				
					5p. Cus. Sedan... 1895 4 3200 aghmnrxt					2p. Coupe... 5000 4 4720 aeghklprx					2-4p. Collap. Cpe... 1995 2 2987 afghlmnprx				
					4p. Cus. Vict... 1895 2 3200 aghilmnrx					7p. Sedan... 5000 4 5050 aeghklprtx					2-4p. Coupe... 1895 2 3097 ahlmnprx				
					"JE"					7p. Limousine... 5200 4 5165 aegklnprtx					4p. Vic. Coupe... 1995 2 3066 ahlmnprx				
					4p. Collap. Coupe... 1995 2 3185 aghmnrx					4p. Berline... 5500 5115 aeghklprx					5p. Sedan... 1895 4 3104 ahlmnprtx				
					4p. Perm. Coupe... 1995 2 3185 aghmnrx					7p. Limousine... 6000 5380 aeghklprx									
					5p. Victoria... 1995 2 3275 aghmnrxt					7p. Brougham... 6000 5025 aeghklprx					"E-75"				
					5p. Sedan... 1995 4 3300 aghmnrxt					6p. Ber. Landau... 6500 5140 aeghklprx					2p. Speedster... 3485 2 4251 aeghlnprx				
										7p. Cabriolet... 6600 5160 aeghklprx					4p. Speedster... 3485 2 4256 aeghlnprx				
										7p. Le Baron Cab... 7000 5200 aeghklprx					5p. Phaeton... 3485 4 4017 aeghlnprx				
										7p. Holbrook Cab... 7200 5280 aeghklprx					7p. Tour. Speed... 3565 4 4480 aeghlnprvx				
										7p. Collap. Cab... 7300 5140 aeghklprx					2p. Coupe Rdstr... 3565 2 4374 aeghlnprx				
															5p. Town Coupe... 3195 2 4452 aeghlnprx				
															2p. Coupe... 3485 2 4373 aeghlnprtx				
															4p. Victoria... 3485 2 4346 aeghlnprtx				
															5p. Brougham... 3565 4 4525 aeghlnprtx				
															5p. Sedan... 3565 4 4498 aeghlnprtx				
															7p. Sedan... 3640 4 4620 aeghlnprtx				
															5p. Cus. Sedan... 3960 4 4515 aeghlnprtx				
															7p. Cus. Sedan... 4075 4 4678 aeghlnprtx				
															7p. Cus. Limou... 4175 4 4718 aeghlnprtx				

KEY TO SYMBOLS:

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|-------------------------------|--------------------------------|--------------------------|--------------------------|--------------------------|
| A—Wood wheels with spare. | D—Disk wheels with spare. | i—Trunk and trunk rack. | o—Car heater. | v—Vanity set |
| a—Wood wheels. | d—Disk wheels. | j—Trunk rack, no trunk. | p—Cigar lighter. | w—Windshield wings |
| B—Wire wheels with spare | e—Front and rear bumpers. | k—Spare tire. | r—Rear traffic signal | x—Clock |
| b—Wire wheels. | f—Front bumper. | l—Spare tire lock. | s—Spotlight | y—Overall length. |
| C—Optional wheels with spare. | g—Shock absorbers or snubbers. | m—Engine heat indicator. | t—Vanity and smoking set | z—Prices on application. |
| c—Type of wheels optional. | h—Automatic windshield wiper. | n—Dash gasoline gauge. | u—Smoking set. | |

Prices, Weights and Equipment of Current Passenger Car Models

Passengers and Model	F.O.B. Price	Doors	Shipping Weight	Standard Equipment	Passengers and Model	F.O.B. Price	Doors	Shipping Weight	Standard Equipment	Passengers and Model	F.O.B. Price	Doors	Shipping Weight	Standard Equipment	Passengers and Model	F.O.B. Price	Doors	Shipping Weight	Standard Equipment
"Special"					PEERLESS					ROAMER					"Commander"				
4p. Roadster....	1225	2	2980	Dghnr	2-4p. Roadster....	\$1195	2	2600	deghlmnr	2p. Roadster....	\$1595	2	3450		4p. Sp. Roadster...	\$1695	2	3333	aeghmnr
5p. Touring....	1135	4	2880	Dghnr	5p. Phaeton....	1195	4	2765	aghlmnrw	2p. Coupe....	1750	2	3225		3p. Bus. Coupe....	1495	2	3500	aghmnr
2-4p. Cabriolet...	1290	4	3070	Dghnr	2-4p. C'pe Rdstr..	1295	4	2725	deghlmnr	5p. Sedan....	1795	2	3380		4p. Victoria....	1495	2	3500	aghmnr
2p. Bus. Coupe....	1165	2	3030	Dghnr	5p. Sedan....	1295	4	2895	deghlmnr					5p. Sedan....	1495	4	3566	aghmnr	
5p. Sedan....	1215	2	3150	Dghintr	"6-80"					"8-80"				4p. C'pe. Regal....	1625	2	3455	aeghmnr	
4p. Coupe....	1245	2	3030	Dghnr	5p. Phaeton....	1395	4	2850	aeghlmnrw	2p. Coupe....	1985	2	3410	ag	4p. Vic. Regal....	1625	2	3500	aeghmnr
4p. Victoria....	1295	2	3170	Dghnr	2-4p. Roadster....	1495	2	3025	aeghlmnrw	5p. Brougham....	1985	2	3440	ag	5p. Sed. Regal....	1625	4	3466	aeghmnr
5p. Sedan....	1265	4	3250	Dghintr	2-4p. Coupe....	1565	2	2975	aeghlmnrw	5p. Sedan....	1985	4	3570	ag	"President 8"				
5p. Coupe....	1445	4	3380	Dghintr	5p. Std. Sedan....	1395	2	3000	aeghlmn					5p. Sedan....	1985	4	4000	aeghmnr	
"Advanced"					5p. Std. Sedan....	1395	4	3125	aeghlmn	"8-88"				7p. Sedan....	1985	4	4040	aeghmnr	
121" W.B.					Spt. Sedan....	1395	4	3100		5p. Tourer....	2495	4	3650	cg	5p. DeL. Sedan....	2250	4	4185	Beghikmnp
4p. Roadster....	1475	2	3400	Dghmnr	5p. Del. Sedan....	1795	4	3125	Deghlmnr	7p. Sedan....	3285	4	3980	cg	7p. DeL. Sedan...	2250	4	4225	Beghikmnp
5p. Touring....	1340	4	3400	Dghmnr	"6-91"					"New Phan"				7p. Limousine....	2450	4	4300	Beghikmnp	
5p. Sedan....	1425	2	3620	Dghmnrt	5p. Phaeton....	1695	4	2930	aeghlmnrx	Open Models....				STUTZ "BB"					
5p. Sedan....	1495	4	3650	Dghmnrt	2-4p. Sp. Roadster	1695	2	2960	aeghlmnrx	Closed Models....				"Custom"					
127" W.B.					4p. Coupe....	1725	2	3050	aeghlmnrx	ROLLS ROYCE				131" W.B.					
7p. Touring....	1440	4	3500	Dghmnr	4p. Sedan....	1895	2	3150	aeghlmnrx	"St. Ghost"				2p. Speedster....	\$3495	2	4478	aefghlmnr	
5p. Sp. Touring...	1540	4	3500	Beghlmpr	5p. Sedan....	1895	4	3200	aeghlmnrtx	Open Models....				4p. Speedster....	3595	4	4509	aeghlmnpr	
5p. Victoria....	1595	2	3640	Dghmnrt	5p. Landaulet....	1995	4	3250	aeghlmnrtx	Closed Models....				4p. Speedster....	3845	4	4600	aeghlmnpr	
4p. Coupe....	1775	2	3650	Dghmnrtx	128" W.B.					"New Phan"				2p. Black Hawk....	4895	2	4495	aeghlmnpr	
5p. Amb. Sedan....	1925	4	3820	Dghmnrtx	7p. Sedan....	1985	4		B	Open Models....				4p. Black Hawk....	4945	2	4495	aeghlmnpr	
7p. Sedan....	1990	4	3830	Dghmnrtx	"8-69"					Closed Models....				2p. Coupe....	3495	2	4449	aeghlmnpr	
7p. Imp. Sedan....	2165	4	3900	Dghmnrtx	128" W.B.					STEARNS-KNIGHT				4p. Vic. Coupe....	3495	2	4679	aeghlmnpr	
OAKLAND					5p. Coupe....	2705	4	3810	Deghlmnrtx	"F-6-85"				5p. Sedan....	3570	4	4977	aeghlmnpr	
"AA-5"					5p. Sedan....	2345	4	3875	Deghlmnrtx	4p. Roadster....	\$3250	2	4252	aeghlmnr	7p. Sedan....	3895	4	5018	aeghlmnpr
5p. Sp. Phaeton...	\$1095	4	2620	achjn	2-4p. Roadster....	2245	2	3850	Deghlmnrx	4p. Touring....	3250	4	4322	aeghlmnr	7p. Sedan Lim....	3995	4	5159	aeghlmnpr
4p. Sp. Rdster....	1075	2	2730	achjn	7p. Sedan....	2545	4	3975	Deghlmnrtx	"F-6-85"				2p. Black Hawk....	4895	2	4495	aeghlmnpr	
2-4p. Cabriolet...	1155	2	2825	ahn	7p. Cus. Sed. Lim	2645	4	4275	Deghlmnrtx	4p. Cab. Rdstr..	3550	2	4500	aeghlmnop	5p. Sedan....	4120	4	4393	aeghlmnpr
5p. 3d. Sedan....	1045	2	2890	ahn	7p. Sedan....	2345	4	4350	Deghlmnrtx	5p. Cus. Sedan...	3350	4	4562	aeghlmnno	4p. Sedan....	4120	2	4393	aeghlmnpr
3p. Land. Coupe....	1045	2	2890	ahn	7p. Sedan....	2545	4	4050	Deghlmnrtx	4p. Coupe....	3450	2	4527	aeghlmnno	4p. Coupe....	4120	2	4393	aeghlmnpr
5p. 4d. Sedan....	1145	4	2980	ahn	7p. Ber. Lim....	2345	4	4100	Deghlmnrtx	5p. Std. Sedan...	3450	4	4572	aeghlmnno	5p. Landau Sed..	4420	4	4393	aeghlmnpr
5p. Land. Sedan...	1265	4	3050	ahnou	PIERCE ARROW					5p. Sedan Lim....	3700	4	4647	aeghlmnno	145" W.B.				
OLDSMOBILE					"81"					5p. Cus. Sed. Lim	3700	4	4637	aeghlmnno	5p. Sedan....	4495	4	4393	aeghlmnpr
"F-28"					2p. Runabout....	\$2900	2	3300	aeghlmnrx	7p. Sedan....	3750	4	4702	aeghlmnno	5p. Sedan....	4545	4	4393	aeghlmnpr
5p. Sp. Roadster...	\$995	2	2980	ceghmnr	4p. Touring....	3100	4	3330	aeghlmnrx	7p. Sedan Lim....	3950	4	4777	aeghlmnno	7p. Landau Lim..	5295	4	4393	aeghlmnpr
5p. Sp. Touring...	995	2	2980	ceghmnr	4p. Conv't Rdster	3450	2	3365	aeghlmnrtx	"H"				5p. PW Sedan....	6345	4	4974	aeghlmnpr	
2p. Coupe....	925	2	2980	ceghmnr	2p. Coupe....	3250	2	3265	aeghlmnrtx	4p. Roadster....	2	2	afghmnpwx	7p. PW Sedan....	6345	4	4974	aeghlmnpr	
5p. Sedan, 2d....	925	2	2980	ceghmnr	5p. Brougham....	3250	2	3360	aeghlmnrtx	2p. Cabriolet....	2	2	afghmnpwx	7p. Con. T'n Car.	6895	4	4974	aeghlmnpr	
2-4p. Spt. Coupe...	995	2	2980	ceghmnr	5p. Club Sedan....	3200	4	3600	aeghlmnrtx	5p. Coupe....	5500	2	4942	afghmnpwx	VELIE				
5p. Sedan, 4d....	1025	4	2980	ceghmnr	2-4p. Coupe....	3350	2	3435	aeghlmnrtx	5p. Sedan....	5100	4	5100	afghmnpwx	"Std. 50"				
5p. Landau Sed..	1085	4	2980	ceghmnr	5p. Sedan....	3350	4	3600	aeghlmnrtx	7p. Touring....	5600	4	4872	afghmnpwx	5p. Sedan....	1115	2	2670	aeghmnr
OVERLAND					5p. Sp. Sed. Land	3350	4	3600	aeghlmnrtx	7p. Sedan....	5600	4	5167	afghmnpwx	5p. Coupe....	1115	2	2670	aeghmnr
"4" Whippet					5p. Club. Land....	3400	4	3695	aeghlmnrtx	7p. Limousine....	5800	4	5217	afghmnpwx	5p. Sedan....	1165	2	2917	aeghmnr
5p. Touring....	\$455	4	1985	agr	7p. Sedan....	3450	4	3670	aeghlmnrtx	7p. Town Cab....	4	4	afghmnpwx	5p. Sedan....	1165	4	3017	aeghmnr	
2-4p. Roadster...	525	2	1932	aghr	4p. Coupe....	3450	2	3450	aeghlmnrtx	7p. Town Bro'm..	4	4	afghmnpwx	"6-66"					
2p. Coupe....	535	2	2060	aghr	7p. Ene. Dr. Lim.	3550	4	3760	aeghlmnrtx	4p. Roadster....	3950	2	4448	aeghlmnpr	5p. Metro Sed....	1195	2	2917	aeghmnr
2-4p. Coupe Cab.	545	2	2122	aghr	"36"					4p. Cabriolet....	4550	2	4717	aeghlmnpr	5p. Metro Sed....	1265	4	2917	aeghmnr
5p. Coach....	535	2	2160	aghr	2p. Runabout....	5875	2	4560	afghlrx	5p. Sedan....	4550	2	4717	aeghlmnpr	2-4p. Metro Cpe..	1265	2	2917	aeghmnr
5p. Sedan....	585	4	2210	aghr	4p. Touring....	5875	4	4510	afghlrx	"H"				"6-77"					
PACKARD					7p. Touring....	5875	4	4585	afghlrx	4p. Roadster....	2	2	afghmnpwx	5p. Spec. Sedan...	1585	4	3365	aeghmnr	
"526"					7p. Sedan....	5875	4	4815	afghlrx	2p. Cabriolet....	2	2	afghmnpwx	5p. Royal Sedan...	1635	4	3395	aeghmnr	
4p. Runabout....	\$2275	2	3620	Deghlmnpr	7p. Lim. Encl....	5875	4	4870	afghlrx	5p. Coupe....	5500	2	4942	afghmnpwx	"8-88"				
5p. Phaeton....	2275	4	3665	Deghlmnpr	3p. Coupe....	6375	2	4760	afghlrx	5p. Sedan....	5500	2	4942	afghmnpwx	5p. Club Phaeton.	2095	4	3640	aeghmnr
5p. Sedan....	2285	4	4000	Deghlmnprtx	4p. Cpe. Sedan....	6375	2	4795	afghlrx	7p. Touring....	5600	4	4872	afghmnpwx	5p. Spec. Sedan...	2095	4	3640	aeghmnr
2-4p. Coupe....	2350	2	3950		7p. Ene. Dr. Lan.	6000	4	4895	afghlrx	7p. Sedan....	5600	4	5167	afghmnpwx	5p. Royal Sedan...	2095	4	3675	aeghmnr
4p. Conv't Cpe....	2425	2	3875		7p. Sedan Lan't..	6000	4	4840	afghlrx	7p. Limousine....	5800	4	5217	afghmnpwx	WILLIS-KNIGHT				
"533"					4p. Lim. Encl....	6375	4	4880	afghlrx	7p. Town Cab....	4	4	afghmnpwx	"Std. 6"					
5p. Phaeton....	2385	3	3745		4p. C. C. Sedan.	6475	4	4805	afghlrx	7p. Town Bro'm..	4	4	afghmnpwx	2-4p. Roadster...	\$995	2	2670	aeghmnr	
4p. Runabout....	2385	3	3700		2p. Coupe....	6600	2	4745	afghlrx	4p. Roadster....	3950	2	4448	aeghlmnpr	5p. Touring....	995	2	2670	aeghmnr
7p. Touring....	2485	4	3865	Deghlmnpr	4p. Sedan Lan't..	6600	4	4800	afghlrx	2p. Cabriolet....	4550	2	4717	aeghlmnpr	2-4p. Coupe....	1045	2	2507	aeghmnr
4p. Coupe....	2685	2	4000	deghintr	4p. Ene. Dr. Land	6600	4	4880	afghlrx	5p. Coupe....	4550	2	4717	aeghlmnpr	5p. Coach....	995	2	2507	aeghmnr
5p. Club. Sedan...	2685	4	4085	Deghlmnpr	7p. Fr. Limou....	7500	4	4740	afghlrx	5p. Sedan....	4550	2	4717	aeghlmnpr	5p. Sedan....	1095	4	2858	aghnru
PONTIAC					7p. Fr. Landau...	8000	4	4865	afghlrx	5p. Sedan Lim....	4850	4	5009	aeghlmnno	"Great 6"				
"6"					REO					7p. Limousine....	4950	4	5102	aeghlmnno	2-4p. Roadster...	1850	2	3486	aeghmnr
2-4p. Roadster...	\$745	2	2270	ahn	"Flying Cloud"					STUDEBAKER				5p. Touring....	1850	4	3675	aeghmnr	
5p. Sp. Phaeton...	775	4	2435	ahn	2-4p. Roadster...	\$1685	2	3300	aeghmnr	"Dictator"				2-4p. Cab Coupe..	1995	2	3726	aeghmnr	
2p. Coupe....	745	2	2435	ahn	5p. Brougham....	1645	2	3425	aeghmnr	7p. Tourer Royal	\$1195	4	3000	aeghmnr	4p. Foursome Sed.	2095	4	4012	aeghmnr
5p. 2d. Sedan....	745	2	2520	ahn	2p. Sp. Coupe....	1625	2	3320	aeghmnr	7p. Sedan....	1195	4	3040	aeghmnr	5p. Sedan....	1995	4	4012	aeghmnr
4p. Sport Cab....	795	2	2455	ahn	4p. Victoria....	1795	2	3350	aeghmnr	7p. Limousine....	1245	2	3000	aeghmnr	"Spec. 6"				
5p. Sedan....	825	4	2595	ahn	5p. Sedan....	1845	4	3550	aeghmnr	7p. Tourer Royal	1295	4	3020	aeghmnr	2-4p. Roadster...	1350	2	2910	aeghmnr
5p. Sp. Landau...	875	4	2640	ahn	5p. Del. Sedan...	1995	4	3550	aeghmnr	7p. Bus. Coupe....	1195	2	3100	aeghmnr	5p. Touring....	1295	4	2951	aeghmnr
WOLVERINE					"Wolverine"					4p. Coupe Royal.	1295	2	3134	aeghmnr	2p. Coupe....	1295	2	2767	aeghmnr
4p. Cabriolet....	1195	2	2850	aeghmnr	4p. Brougham....	1195	2	2930	aeghmnr	7p. Victoria Royal	1295	2	3184	aeghmnr	5p. Coach....				

Mechanical Specifications of Current Passenger Car Models

This list comprises current cars distributed on a national basis only. Data for previous models back to 1920 will be found in the Chilton Catalog and Directory

MAKE AND MODEL	Wheel Base (Inches)	Tire Size	ENGINE										ELECTRICAL SYSTEM				REAR AXLE		BRAKES		Steering Gear—Type and Make	Rear Spring—Type and Length	Chassis Lubrication—	ABBREVIATIONS— NAMES OF MFRS. OF STOCK PARTS								
			Make and Model	Number of Cyls.	Rated H.P.	Valve Arrangement	Maximum Brake Horsepower at Specified Speed	Compression Ratio	Camshaft Drive	Piston Material	No. Main Bearings	Dampers	Oiling System	Oil Cleaner?	Carburetor	Air Cleaner?	Ignition System	Generator and Starter Make	Clutch—Type and Make	Gear Set—Make					Universal Make	Type and Make	Gear Ratio	Foot—Type and Location	Hand Location	4-Wheel Type		
Auburn.....	76	28x5.25	Lyc.....	WS	19.8	185	L	88-3200	5.05	Ch.	Al.	4	1	PG	N	N	N	N	N	D-R	D-R	P. Long.	War.	m-U-P	Col.	4.9	L-F	H	Ross	S-56 1/2	Bj.	A-Bos—American-Bosch
Auburn.....	88	30x6.00	Lyc.....	GS	26.4	247	L	115-3200	5.35	Ch.	Al.	4	1	PG	N	N	N	N	N	D-R	D-R	P. Long.	War.	m-U-P	Col.	4.9	L-F	H	Ross	S-56 1/2	Bj.	A-K—Atwater Kent
Auburn.....	115	30x6.00	Lyc.....	MD	33.8	299	L	63-2800	4.79	Ch.	Al.	4	1	PG	N	N	N	N	N	D-R	D-R	P. Long.	War.	m-U-P	Col.	4.9	L-F	H	Ross	S-56 1/2	Bj.	A-L—Auto-Lite
Buick.....	115	31x5.25	Own.....	6-3/4x4 1/2	23.4	207	L	77-2800	4.3	He.	C.I.	4	1	PC	N	N	N	N	N	D-R	D-R	D. Own.	Own.	m-Own.	Fl. Own.	4.72	E-F	M	Jac	V-48	Jac	Ada—Adams
Buick.....	120-128	33x6.00	Own.....	6-3/4x4 1/2	29.4	274	L	77-2800	4.3	He.	C.I.	4	1	PC	N	N	N	N	N	D-R	D-R	D. Own.	Own.	m-Own.	Fl. Own.	4.72	E-F	M	Jac	V-48	Jac	Al—Alameda
Cadillac.....	341	32x6.75	Own.....	8-3/4x4 1/2	35.1	341	L	90-3000	4.9	Ch.	Ni.	4	1	PH	N	N	N	N	N	D-R	D-R	hp. Own.	Own.	m-Spi.	Fl. Own.	4.9	B-F	M	Jac	S-60	Jac	Alm—Alameda
Chandler.....	124	32x6.00	Own.....	6-3/4x4 1/2	33.7	180	L	83-2600	5.0	Ch.	C.I.	4	1	PH	N	N	N	N	N	D-R	D-R	P. Long.	War.	m-U-P	Col.	4.9	L-F	H	Ross	S-59 1/2	Go.	Am—Alameda
Chandler.....	109	30x6.00	Own.....	6-3/4x4 1/2	33.7	180	L	83-2600	5.0	Ch.	C.I.	4	1	PH	N	N	N	N	N	D-R	D-R	P. Long.	War.	m-U-P	Col.	4.9	L-F	H	Ross	S-59 1/2	Go.	Am—Alameda
Chandler.....	109	30x6.00	Own.....	6-3/4x4 1/2	33.7	180	L	83-2600	5.0	Ch.	C.I.	4	1	PH	N	N	N	N	N	D-R	D-R	P. Long.	War.	m-U-P	Col.	4.9	L-F	H	Ross	S-59 1/2	Go.	Am—Alameda
Chandler.....	124	30x6.00	Own.....	6-3/4x4 1/2	33.7	180	L	83-2600	5.0	Ch.	C.I.	4	1	PH	N	N	N	N	N	D-R	D-R	P. Long.	War.	m-U-P	Col.	4.9	L-F	H	Ross	S-59 1/2	Go.	Am—Alameda
Chandler.....	124	30x6.00	Own.....	6-3/4x4 1/2	33.7	180	L	83-2600	5.0	Ch.	C.I.	4	1	PH	N	N	N	N	N	D-R	D-R	P. Long.	War.	m-U-P	Col.	4.9	L-F	H	Ross	S-59 1/2	Go.	Am—Alameda
Chrysler.....	152	30x4.50	Own.....	4-3/4x4 1/2	21.7	171	L	35-2000	4.6	He.	Al.	4	1	PC	N	N	N	N	N	D-R	D-R	P. Long.	War.	m-U-P	Col.	4.9	L-F	H	Ross	S-59 1/2	Go.	Am—Alameda
Chrysler.....	152	30x4.50	Own.....	4-3/4x4 1/2	21.7	171	L	35-2000	4.6	He.	Al.	4	1	PC	N	N	N	N	N	D-R	D-R	P. Long.	War.	m-U-P	Col.	4.9	L-F	H	Ross	S-59 1/2	Go.	Am—Alameda
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Chrysler.....	152	30x4.50	Own.....	4-3/4x4 1/2	21.7	171	L	35-2000	4.6	He.																						

for Economical Transportation



Smoother and more Powerful!



The marvelous performance of the Chevrolet valve-in-head motor has long been a vital factor in Chevrolet's world-wide popularity. And now, with thrilling new power, speed and smoothness to offer, Chevrolet performance is literally creating a sensation—thrilling thousands of new owners every day.

Never before has a low-priced car offered such wonderful demonstration possibilities. Never before in Chevrolet history has a single ride behind the wheel so thoroughly sold the prospect on Chevrolet ownership.

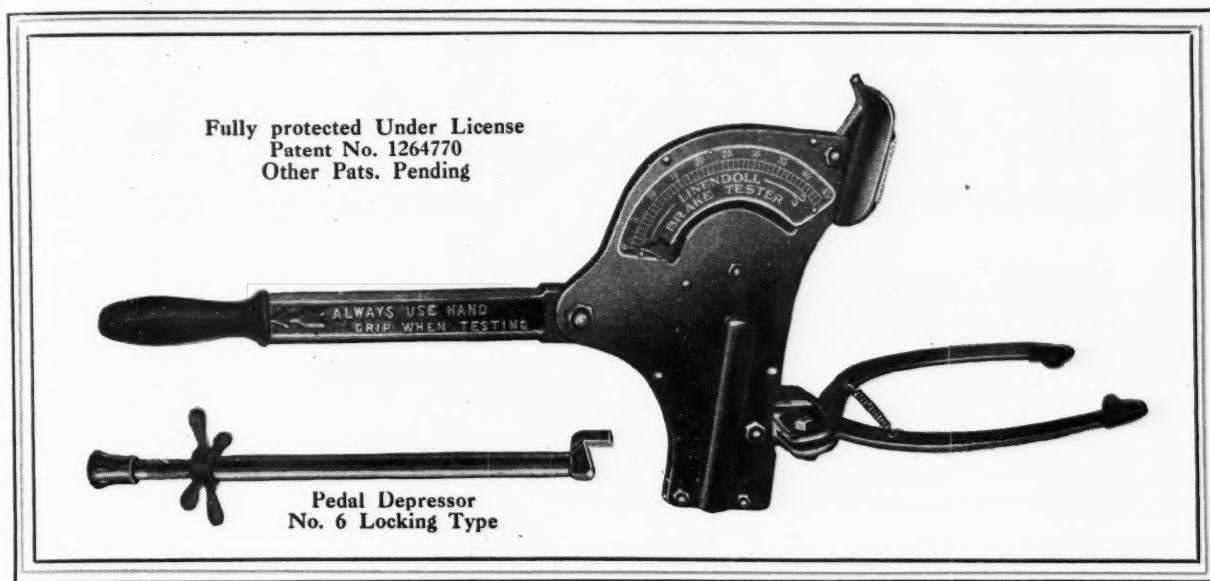
This thrilling performance is one of the major reasons why Chevrolet sales in every section of America are even greater than in 1927—when Chevrolet produced and sold more automobiles than any other motor car manufacturer in the world!

CHEVROLET MOTOR COMPANY, DETROIT, MICHIGAN
Division of General Motors Corporation

Q U A L I T Y A T L O W C O S T

Zen-Zenita
 Y-Yes
 Ys-Vacuum servo
 Ys-Variety
 Y-Sleeve Valve
 R-Rectifier
 S-Semi-elliptic
 PE-Pressure to mains, rods
 wristpins, timing case
 O-Special type (rear springs)
 OG-Oil cups
 OG-Oil and Grease Cups
 He-Helical gear
 I-In head
 I-R-Internal rear wheels
 E-F-External four wheels
 E-R-External rear wheels
 E-T-External transmission
 I-Fabric
 Als-Aluminum with Strut
 B-Semi-steel
 B-F-Internal front and
 external rear

WHY PAY MORE?



The Linendoll Brake Tester Costs Only \$37.50 —Does a Complete Brake Testing Job

Get that highly profitable business in equalizing brakes on all passenger cars and light trucks with the Linendoll Auto Brake Tester. Inexpensive, yet it gives all the necessary information for accurate brake testing. It not only saves you money on investment but cuts labor costs and saves valuable floor space.

It's only a one-man job—with the lock

type pedal depressor furnished with every Linendoll Tester. Results are accurate—complete—and you get them quicker! Detects unequal tension immediately!

Complete your brake adjusting service with this equipment! It means more business and more profit for you. Ask your jobber about the new Linendoll or write us for illustrated information!

THE NORWALK AUTO PARTS COMPANY
Norwalk, Ohio

Gen. Sales Office:
Real Estate Trust Bldg.
Philadelphia, Pa.

Plants and
Executive Offices:
Norwalk, Ohio

Linendoll

AUTO BRAKE TESTER

SHERWIN- PAINTS VARNISHES

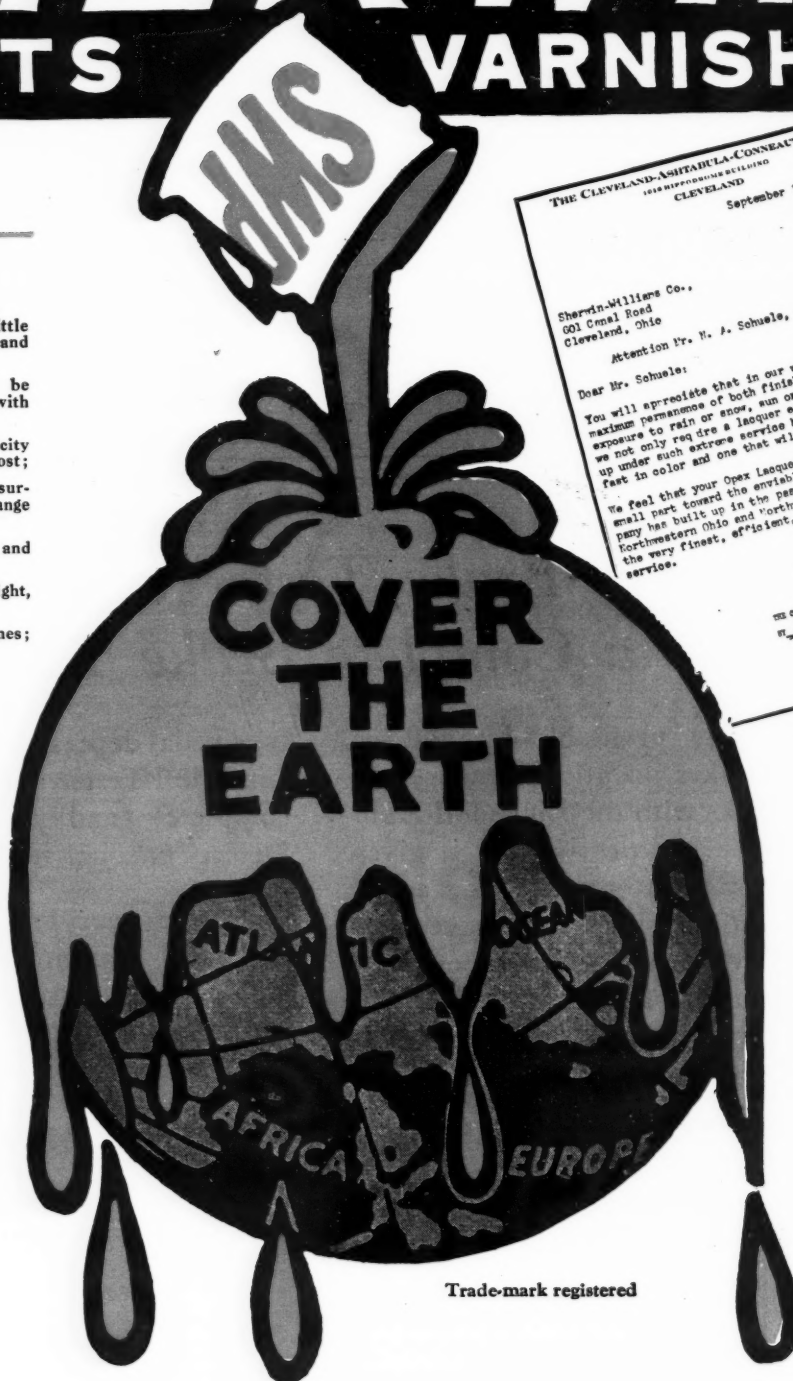
If you want—

- 1 —A hard, tough, but not brittle film that is wear, water, and weather proof;
- 2 —A natural gloss that can be brought to a high lustre with the lowest labor cost;
- 3 —Exceptional covering capacity with a minimum material cost;
- 4 —An even flow and smooth surface free of bubbles, orange peel or blushing;
- 5 —Fast color lacquer enamels and colorless clears;
- 6 —Uniformity of consistency, weight, and shade;
- 7 —No residual color or toxic fumes;

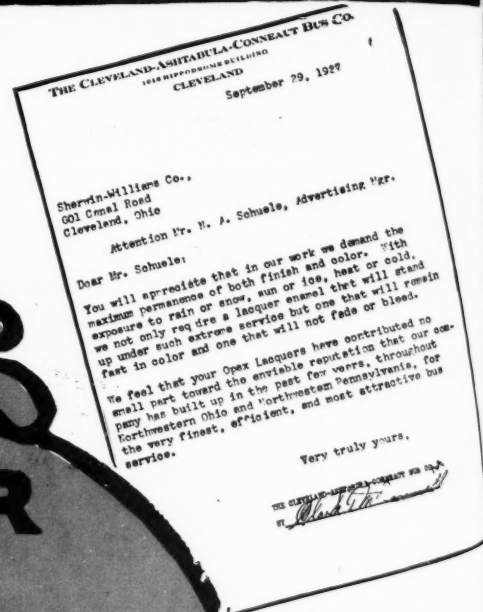
You will use



The perfected
lacquer enamel



Trade-mark registered

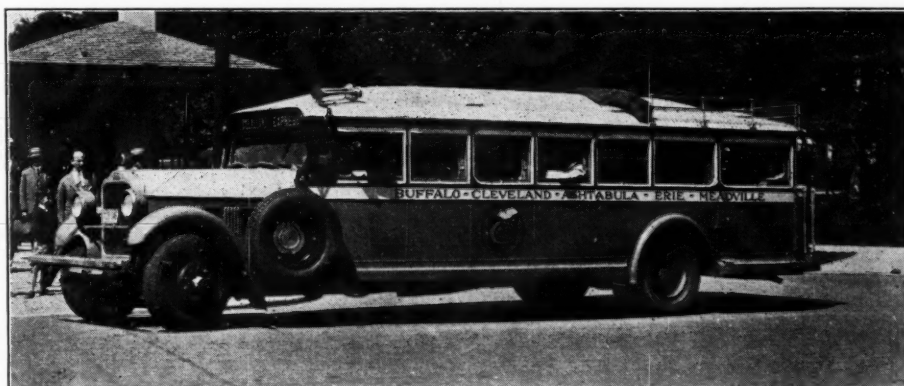


LARGEST IN

WILLIAMS

LACQUERS · ENAMELS

A typical, Opex finished bus of the Cleveland-Ashtabula-Conneaut Bus Co. that does a big business between Buffalo and Cleveland



“We are
Continuing to use **OPEX**
writes prominent bus company

“In our finishing department we require not only the most durable lacquer but the one that can be applied with a minimum of labor and material. It is for this reason that we are continuing to use your Opex Automotive Lacquers and Enamels—because their greater covering capacity means lower material cost and the higher natural gloss of Opex, plus its excellent working qualities, results in lower labor costs.

“You, of course, will appreciate that in our work we must demand the maximum permanence of finish and color. With the constant exposure to rain or snow, sun or ice, heat or cold, we not only require a lacquer enamel that will stand up under such extreme service but one that will remain fast in color and one that will not fade or bleed.

“We feel that your Opex Lacquers have contributed

no small part toward the enviable reputation that our company has built up in the past few years, throughout Northwestern Ohio and Northwestern Pennsylvania, for the very finest, efficient, and most attractive bus service.”

Like hundreds of consistent users of Opex, the Cleveland-Ashtabula-Conneaut Bus Co. praises its economy in use. Note what Clark T. McConnell, president of the Cleveland-Ashtabula-Conneaut Bus Co., says of *reduced labor costs, greater durability and beauty of Opex finishes.*

The coupon below will bring you some interesting facts on how Opex Automotive Lacquers will help increase profitable business in your finishing shop.

THE SHERWIN-WILLIAMS CO.
Cleveland, Ohio

The Sherwin-Williams Co.
420 Canal Rd., N. W., Cleveland, Ohio
Please send me complete data on Opex.
Name and Title.....
Company.....
Address.....
City..... State.....

THE WORLD



Some like—
COFFEE
So with
"It's a matter

USE AUTOMOBILE TRADE JOURNAL

75,000 TRADE

Automobile Trade Journal, a monthly, 50,000 strong, looked upon by dealers as a monthly hand book for merchandising success. Established 1896.

Use it with *Motor Age* for complete coverage.

Tea and coffee are popular drinks. Both have a strong following—each has its ardent admirers. Whether one dealer prefers one, and another dealer prefers the other, is simply a matter of personal taste.

MOTOR AGE and AUTOMOBILE TRADE JOURNAL are popular automotive publications. Each has a strong following—each has its ardent admirers. Whether you prefer one or the other is simply a matter of personal taste.

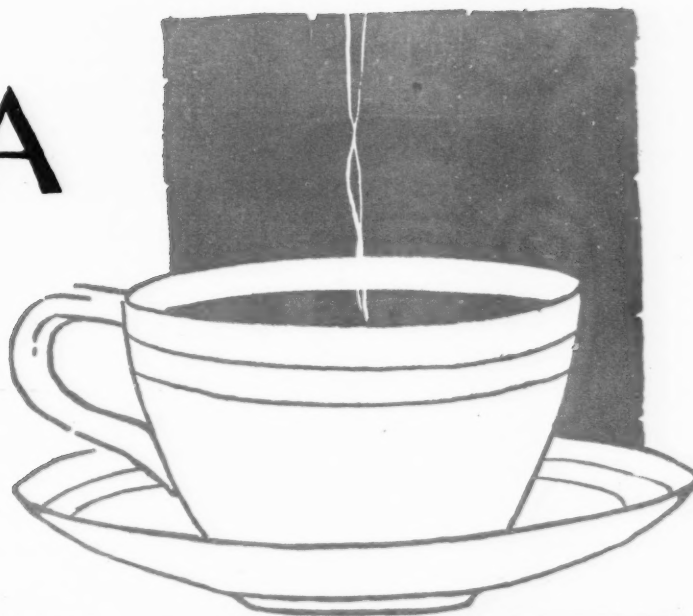
Automobile Trade Journal, a monthly, appeals to dealers who like a monthly text book. *Motor Age*, a weekly, appeals to dealers who want a newsy automotive magazine every week. Together they guarantee manufacturers 85% of the

Come to Automotive

CHILTON CLASS JOURNAL

-some TEA

*Dealers
of....Taste"*



and MOTOR AGE - Get 'em all -

OUTLETS

buying power of the automotive trade.

Any manufacturer seeking new dealers or cultivating dealer good will, needs *Automobile Trade Journal* and *Motor Age*, in the interest of efficiency and economy. They represent 100% of his needs.

These magazines are as old as the industry, which means *experience*. They are owned by a business paper organization owning its own paper mill, its own buildings and equipment, which means *stability*. Its success is built on *service*, as evidenced by its maintenance of the only worthwhile Research, Merchandising and Service Department for the use of manufacturers and agents who are interested in the automotive field.

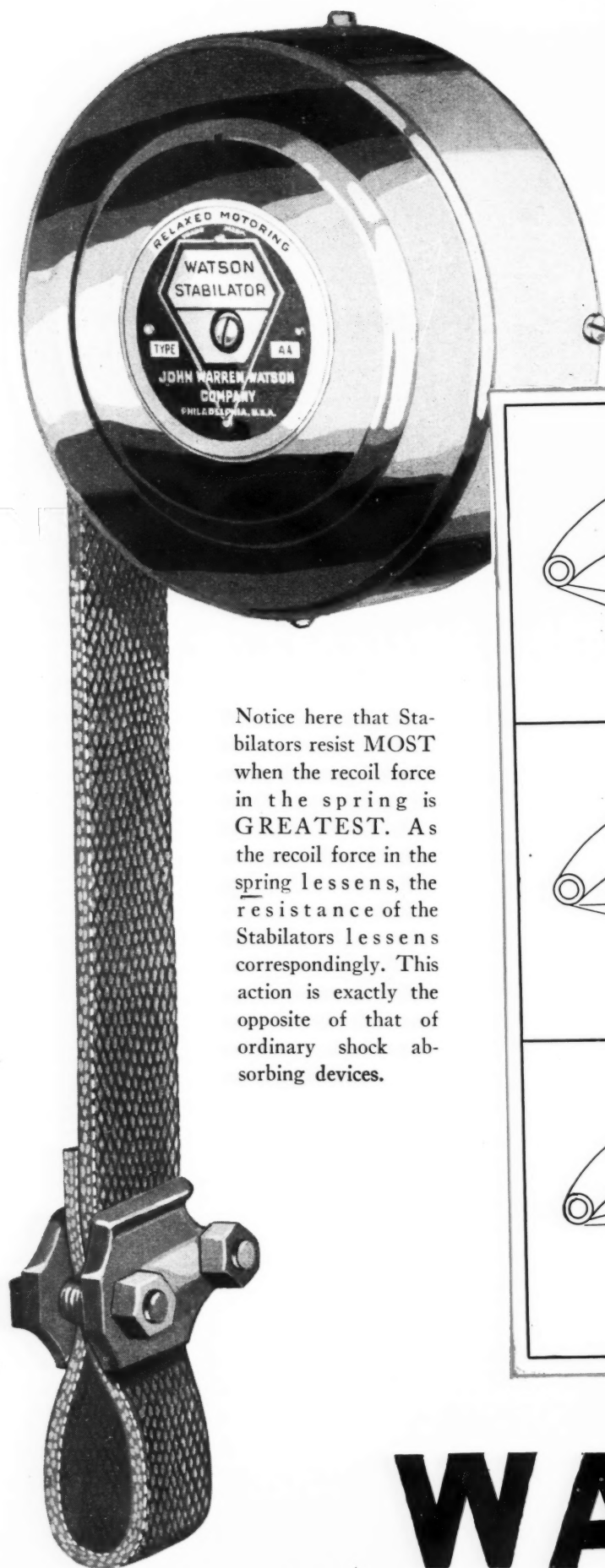
Motor Age, a weekly, 25,000 strong, used by dealers as a merchandising guide and a weekly newspaper of the trade. Established 1899.

Use it with *Automobile Trade Journal* for complete coverage.

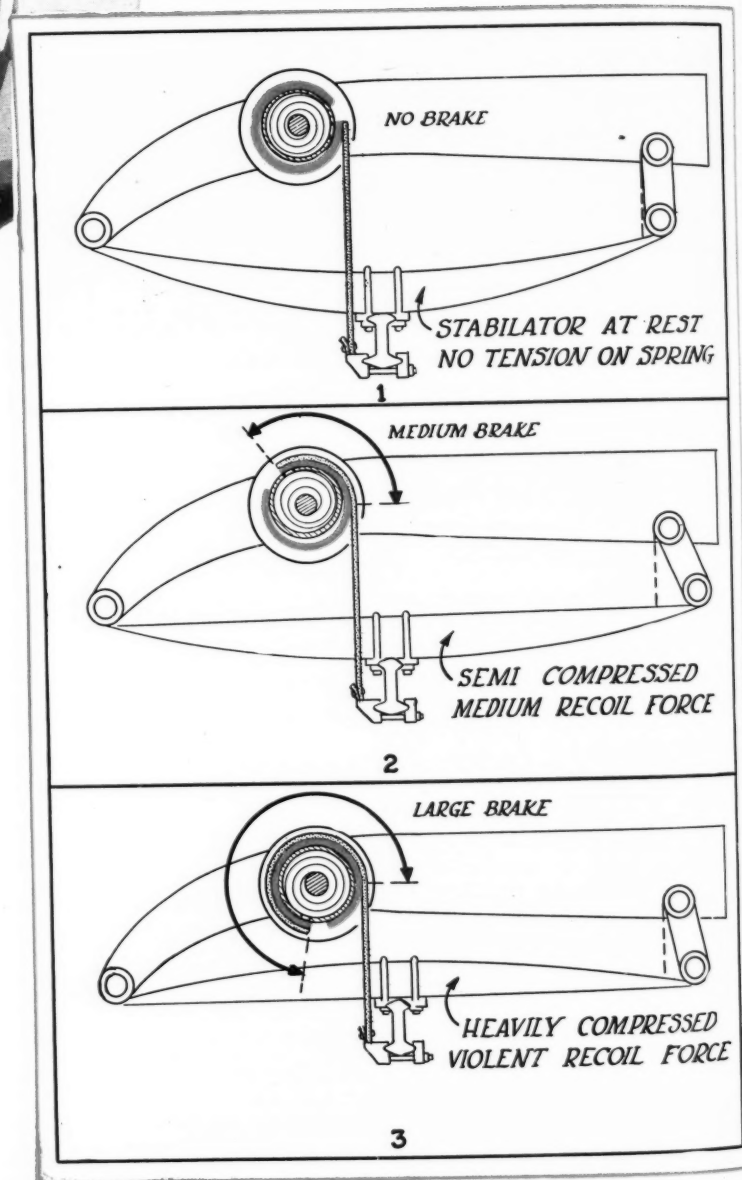
Headquarters!

COMPANY - 56th & Chestnut Sts., Phila

Why has
more



Notice here that Stabilators resist **MOST** when the recoil force in the spring is **GREATEST**. As the recoil force in the spring lessens, the resistance of the Stabilators lessens correspondingly. This action is exactly the opposite of that of ordinary shock absorbing devices.



WATSON

the Watson Dealer Organization than doubled itself in the past 7 months?

First—because Watsons are fundamentally
different in principle from all other
Easy Riding Devices!



Second

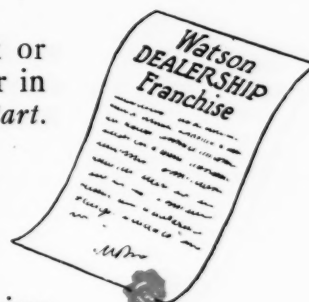
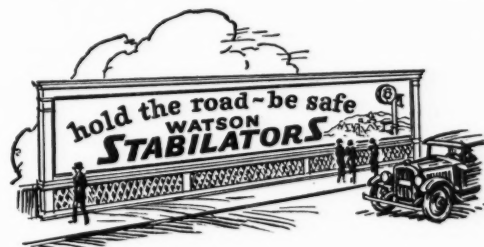
—because everybody knows Watson Stabilators. For years full pages have been running in the Saturday Evening Post and other leading magazines educating the motoring public to true riding comfort.

Excessive force of spring rebound is the thing that makes motoring uncomfortable—that throws you off the seat. And the greater the excess force, the greater the throw.

In various ways other devices try to check or stop these throws. Watson Stabilators differ in that they *never permit these throws to start*. They use up the excess force of spring rebound BEFORE it can throw the car body into the air . . . and very simply. The instant the force starts to move the axle and frame apart, it must drag four Watson Stabilators as well as lift the car body. Dragging the Stabilators uses up the excess force—so that the remaining force in the springs is not sufficient to throw the car body—but only enough to raise it, nicely and gently to normal position.

Watson Stabilators work on the age-old principle that it is better to PREVENT trouble than to try to stop it after it has gained headway.

John Warren Watson Company
PHILADELPHIA PENNSYLVANIA



Third

—because the new Watson Sales Proposition for merchants in small towns and city communities, is an unusual new money-making opportunity for the man who cannot afford to put in large inventories and clog up his shelves with dead stock.

The Watson Dealership may be open in your neighborhood—
Write and find out about it NOW!

STABILATORS

Metal Knowledge



it's value to YOU!

THE JEWELS OF THE MOTOR

In the manufacture of bearings, technical metal knowledge in purchasing, alloying and fabrication is of paramount importance.

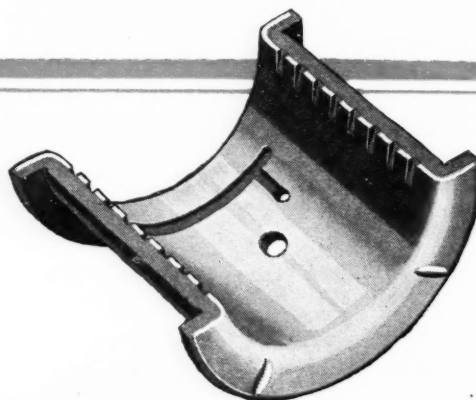
Its influence originates in the selection of raw materials according to strict specifications whether for bronze, steel or babbitt. The transformation of these metals into the bronze or steel shell with its babbitt lining is constantly under the direct supervision of the seasoned Bohn metallurgical staff.

To assure the necessary quality of babbitt, it is never purchased as ingot made from uncertain materials, but is alloyed entirely in the Bohn plant from Straits tin, virgin copper and virgin antimony, and constantly checked by Bohn laboratories.

The conscientious application of special metal knowledge pertaining to bearings, possessed by the Bohn metallurgists, is one of the many reasons why Bohn Ring True Bearings occupy such a unique position and are specified by so many of the foremost engineers.

BOHN ALUMINUM & BRASS CORPORATION, DETROIT, MICHIGAN

Also manufacturers of Nelson Bohnalite Pistons and Bohnalite Castings



NELSON BOHNALITE PISTONS

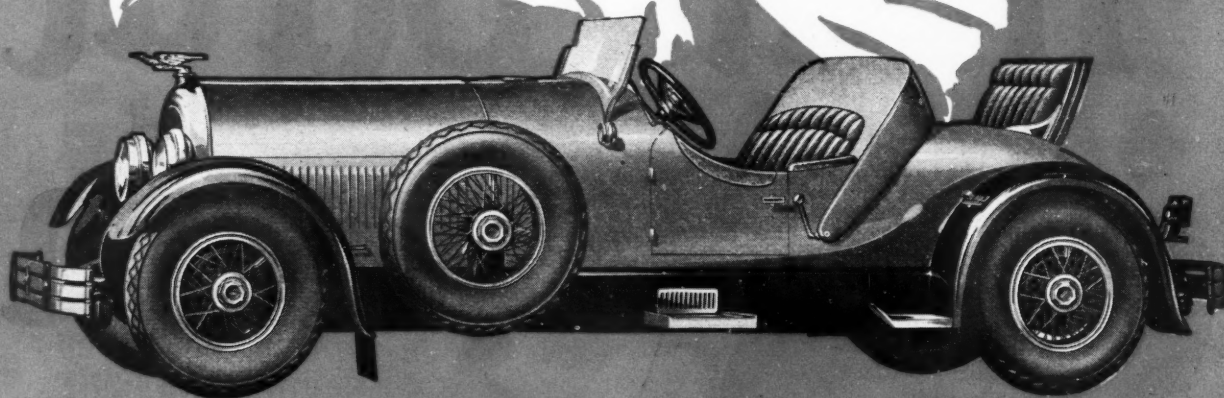
The Original Invar Strut Piston



Special alloy
steel Backbones
—the original In-
var Steel Struts
—are cast in, to
control expan-
sion and main-
tain satisfactory
clearances under
all engine oper-
ating conditions

BOHN ALUMINUM & BRASS CORPORATION, DETROIT, MICH.
Also makers of the famous Bohn Ring True Bearings

KISSEL



New Kissel White Eagle Speedster *115 Horsepower—*

White Eagle—emblematic of daring, courage, speed, power! King of the Skies! White Eagle—the beautiful new white Kissel Speedster—sensation of 1928—King of Straight Eights! A white streak across the countryside—terrific speed for red-blooded Americans who de-

mand speed at its speediest. A Niagara of power, awaiting your command! Yet quiet, pliant, smooth—as only Kissel, with 21 years experience in custom building, could build it. Write or wire for complete information about this new car.

Motor by Kissel—Body by Kissel

1928

The New White Eagle De Luxe Series

Magnificent and luxurious are the new De Luxe Kissels powered by the great White Eagle motor. These cars are the finest that fine custom building can create. These are the finest cars that have ever borne the famous name of Kissel.

The New Smaller Kissel Eight \$1895

There's spirit, verve, youth, to this new Smaller Eight by Kissel. Low—only 66 inches from top to roadway. The wheelbase, 125 inches. Speed, 75 miles an hour. A long, long hood that looks ahead into tens of thousands of miles of uninterrupted travel—and under the hood, an engine as reliable as the 20th Century. It's completely cushioned in rubber—completely custom built.

f. o. b. factory, standard equipped

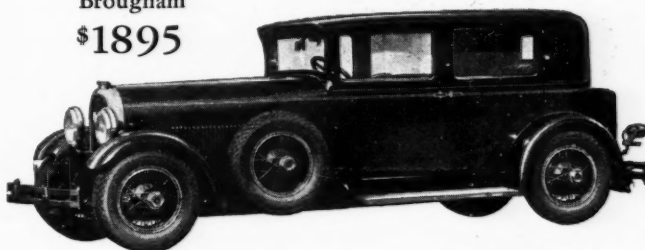
The New Smaller Kissel Six \$1495

The Smaller Kissel Six is only 66 inches high. Its wheelbase is just 117 inches. 70 miles an hour, hour after hour. Comfortable without being cumbersome. Engine, springs and chassis are completely cushioned in rubber. Designed primarily for those who desire a smaller car of higher quality—a quality priced within range of all. The Sedan, \$1495—the Coupe Roadster, \$1595.

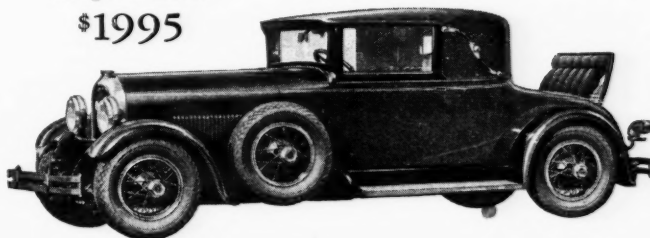
f. o. b. factory, standard equipped

KISSEL MOTOR CAR CO., HARTFORD, WIS.

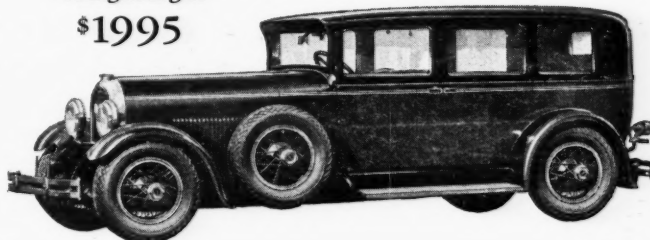
The Straight Eight
Brougham
\$1895



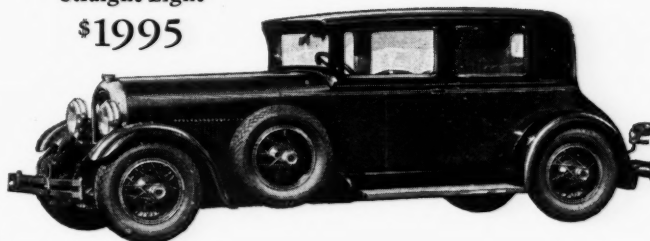
The Straight Eight
Coupe Roadster
\$1995



5-Passenger Sedan
Straight Eight
\$1995

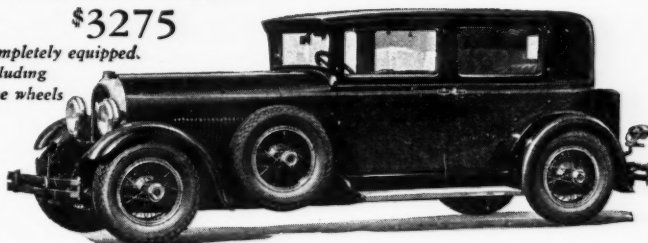


The New Victoria
Straight Eight
\$1995



De Luxe Straight 8
White Eagle Brougham
\$3275

*Completely equipped,
including
wire wheels*



*All prices f. o. b. factory
Standard equipped*

There are **JUMBO PROFITS** *in* **Brake Service!**

Come on into the Brake Service Business! It's big—it's growing—you need it, and it needs you! Car dealers are taking it on—their customers demand it. Brake Stations are starting up everywhere—and making money.

There are big profits in Brake Service—for *Jumbo*-equipped shops!



Jumbo Brake Drum Turning and Grinding Machine

This compact machine trues the inside and outside of brake drums of cars and trucks quickly, accurately, and economically. Rugged construction, fully automatic, timkenized throughout, it assures trouble-free service for years. The only universal machine for both turning and grinding. Faster, more accurate, and will make more money for you.

JUMBO EQUIPMENT

MAKES SERVICE PAY



JUMBO EQUIPMENT — every unit of it is built to *make money for the user.*

Every unit is designed to turn the jobs out *right* and *rapidly*—to hold down overhead and build up profits.

Back of the line are the tremendous resources of the Price-Hollister and Affiliated Companies—a \$2,000,000 institution, with many acres of manufacturing floorspace, with laboratories and model service stations to test out each unit in actual commercial service.

Install only JUMBO EQUIPMENT and you are sure of dependable machinery, backed by a dependable house—machinery that will *make money for you!*

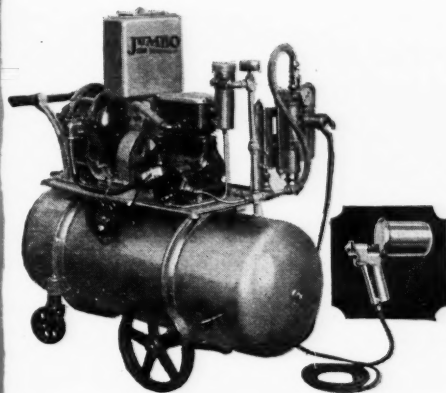
Mail Coupon

THE PRICE-HOLLISTER CO., Dept. P-4
Rockford, Ill. Please send data on

- ☐ Brake Drum Machine
☐ Spray-Paint Unit
☐ Spray-Mist Washer
☐ Thor-O-Test
☐ Giant Brake Tester

Name.....

Address.....

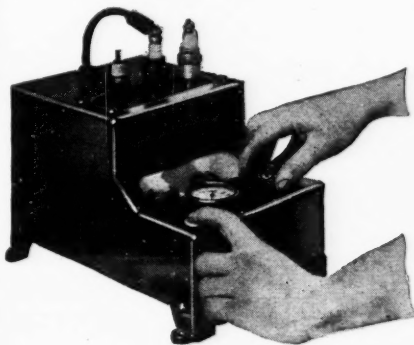
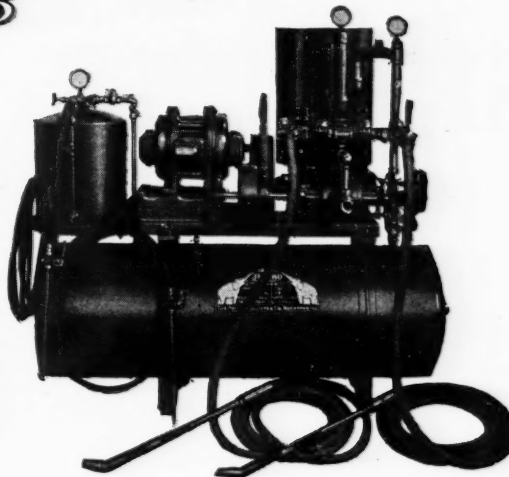


Jumbo Portable Spray-Paint Unit

Compact, with smooth-running 4-cylinder compressor, here's the ideal low-cost outfit for rapid "cup-gun" jobs. Easily rolled from car to car. Does more work in less time than any other paint spray outfit made. Uses any gun, but for best work get the Jumbo Spray Gun and Conditioner shown — it atomizes lacquer perfectly, giving even, mirror surface that needs little or no rubbing.

Jumbo Spray-Mist Washer

Combines, in one compact unit, Air Compressor, Car Washer, Penetrating Oil Sprayer. Needs only 6 x 3 ft. floorspace. Investment is far less than in three separate outfits to do the same work. Installation cost is much lower—and you use less water and current. This Jumbo Unit turns out more jobs per day and does motor, transmission and axle jobs that ordinary outfits can't do. A great money maker!



Jumbo Thor-O-Test for Ignition

Tests cables, coils, and spark plugs, under compression — under actual running conditions. Locates faulty plugs, shorts, and all other ignition troubles. A money maker and money saver needed by all dealers, garages, and fleet shops. Just connect to air line and plug into light socket.



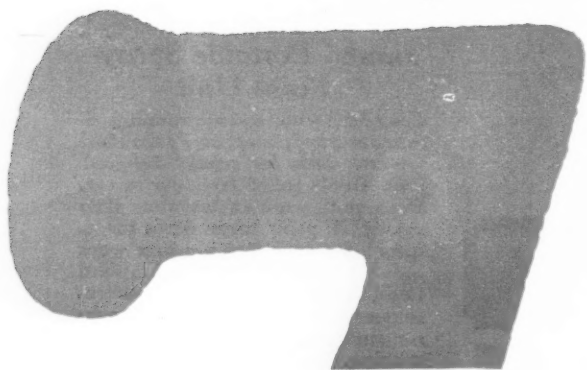
Jumbo Giant Brake Tester

Car dealers, garages and brake service stations find this simple, easily operated machine fills the demand for volume service. Handles up to 50 cars a day—and every test convinces the driver with his own eyes that brake adjustments are necessary. Also shows the need for relining and drum-truing. Quickly pays for itself—completes the job in a fraction of the time needed by other testers—involves no estimating or figuring. Sold on partial payment plan.

The PRICE-HOLLISTER CO.
ROCKFORD, ILL.

JUMBO EQUIPMENT

MAKES SERVICE PAY



SPECIFIC ADVANTAGES



*which we believe are offered
by no other account*

- 1) Two new lines of modernly designed straight-eights. The public has already conclusively demonstrated that it likes them.
- 2) The opportunity to do a volume business on a reasonably conservative investment.
- 3) All of the sales advantages of the popular priced lines, but without the high pressure that usually goes with a volume account. A steady, sure money-maker.
- 4) You run your own business.
- 5) A franchise agreement with no car contract attached to it. Conservative stocks are Marmon policy.
- 6) A permanent connection with an "independent" that right now is registering *the highest percentage of gain of any factory in the business.*
- 7) Merchandising assistance which is actual and real. Outstanding advertising to the public and constructive assistance to retail salesmen through a highly organized sales promotion department, operating through regional offices, field schools, etc.

*Universally this account is making money
Ask any dealer who is handling it*

MARMON MOTOR CAR COMPANY — INDIANAPOLIS

MARMON

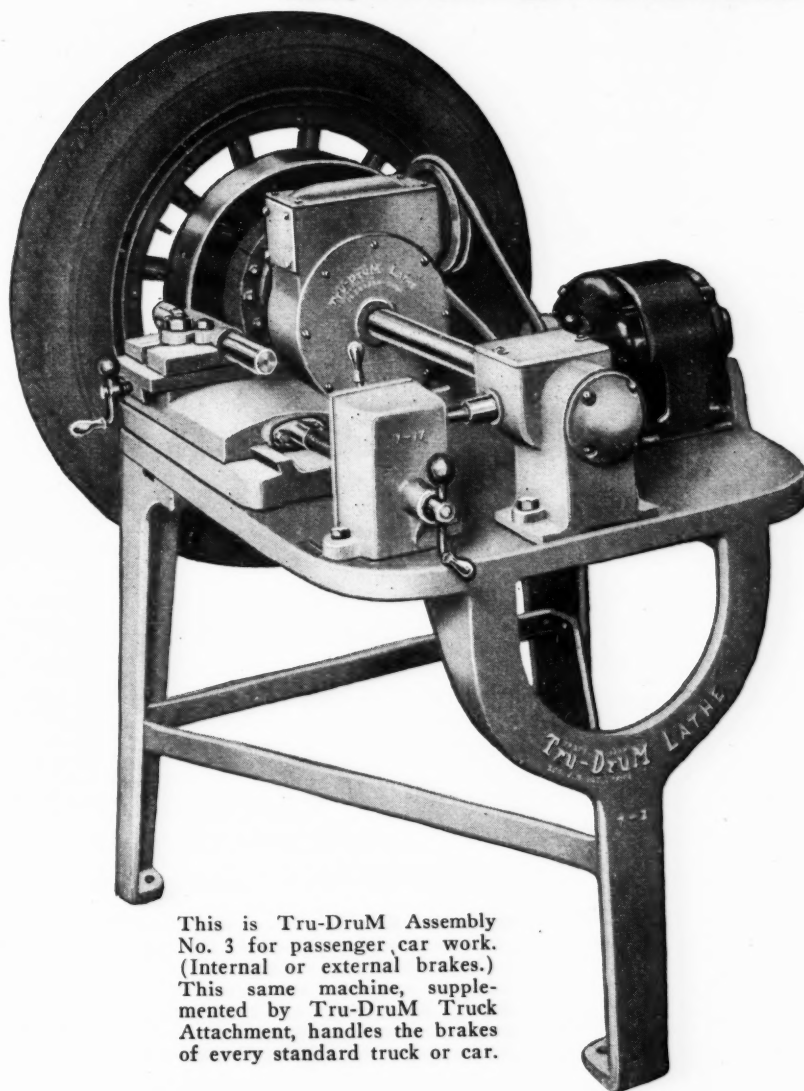
Tru-DruM

TRADE MARK REG. U.S. PAT. OFFICE

AUTOMATIC BRAKE DRUM LATHE

Turn
Shop
Time
Into
PROFIT

Motorists are demanding better and safer brakes. Be prepared to provide them at a profit. The Tru-DruM Automatic Brake Drum Lathe belongs in every modern brake shop. No skilled labor required. Drums are trued without removing them from wheels; without removing even tires. There is only one original Tru-DruM Lathe, automatic throughout. The operator goes about his regular duties, doubling his time, while the Tru-DruM perfects each drum. Simply mail the coupon for the full story of Tru-DruM, with complete description and price information.



This is Tru-DruM Assembly No. 3 for passenger car work. (Internal or external brakes.) This same machine, supplemented by Tru-DruM Truck Attachment, handles the brakes of every standard truck or car.

Manufacturers' Auto Equipment Co.
995 East Green Street, Pasadena, Cal.

Send us by return mail your free circular MA-4 regarding the Tru-DruM Lathe.

Name

Address

My Jobber is

**ORDER FROM
YOUR JOBBER**

*Mail
this
today*

Pioneers of Direct Two-way Rebound Control

Foreign and Domestic Patents Pending



SUPERIOR REBOUND CONTROL

Sell Riding Comfort

NOISELESS ball bearing contact insures spring resiliency attained only by using Superior Rebound Control. In big demand by experienced motorists.

Reduces spring breakage to a minimum. Made of finest spring steel, oil tempered and drawn. Adds riding comfort to the car and prolongs life.

At one-fourth the price of other equipment

The largest builder of 4-cyl. cars adopts spring control as standard



The profit possibilities involved in selling the new Superior Rebound Control are unlimited. Easy to install. Made to fit the car. Complete set consists of six units, except Ford models.

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2905 60th STREET
KENOSHA, WISCONSIN

Liberal Discounts

Order Today

Ford Model T \$6.50

Ford Model A 8.00

Chevrolet, Pontiac, Whippet and all cars with 1 3/4 inch springs, \$9.75

Nash, Buick, Hudson, Essex and all other automobiles, \$12.00

Trucks and Buses, \$9.75 to \$21.00

Denver and West, \$1.00 more

ACT NOW

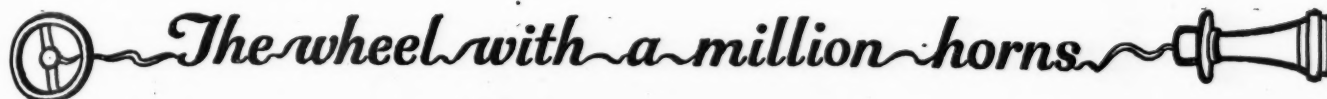
Superior Rebound Control, Inc.
2905 60th Street
Kenosha, Wis.

Gentlemen: Please send me complete information without obligation on my part.

Name

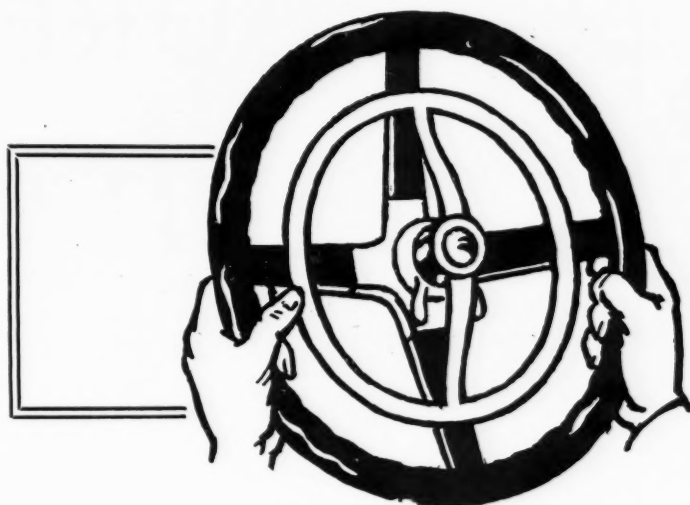
Address

City State

 *The wheel with a million horns*

DENSE TRAFFIC means—

\$375
LIST
PRICE



THE SENTRY WILL GO BIG!

Car owners, more and more, find it necessary to warn other users of the highways and pedestrians of their approach, and often modern dense traffic conditions make it necessary to keep both hands busy doing something else than sounding the horn. The Sentry Horn Control meets this situation to a "T." From any position of the wheel, the horn control is right under the driver's thumb. He drives—and sounds his warning signal—

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What if some of your old line accessories are on a decline due to the standard equipment situation? Here's an item—a profitable item—that's just starting to go and *go big* because the time is right, the product is right, the price is right. Ask your jobber for further sales facts and interesting trade proposition or write us direct.

Wiley-Noyes Manufacturing Co.

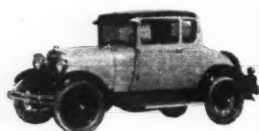
284 Somerville Ave.

Somerville, Mass.

SENTRY

HORN CONTROL

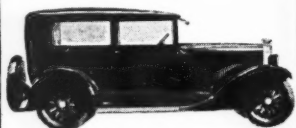
The New
STROMBERG
PUMP
VIS-A-GAS
Carburetor
for



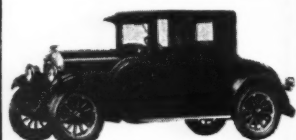
FORD



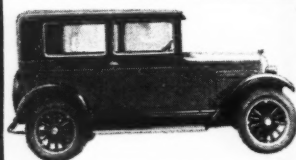
CHEVROLET



PONTIAC



CHRYSLER-52



WHIPPET



DURANT

Complete—
Ready to Install

\$17⁵⁰
Each

Sell and Service **STROMBERG** **CARBURETORS** *why?*

*Because There is a Big, Ready
Demand and Real Profit—*

With the introduction of the wonderful Stromberg Vis-A-Gas Pump Carburetor, thousands of 1928 model Fords, Chevrolets, Pontiacs, Chryslers, Whippets, Durants and all other makes of cars will be a big and ready market for Carburetor replacements.

For this latest creation of the Stromberg Laboratories meets and excels every demand of the modern motorist.

It assures amazing power and speed thrills. Acceleration and pick-up that always leaves the crowd behind. The new patented pump does it.

Double idler enables one to go slowly with smooth, easy motor action.

Patented automatic economizer that regulates mixture to the last degree of perfection at all speeds and gives greatest possible gasoline economy.

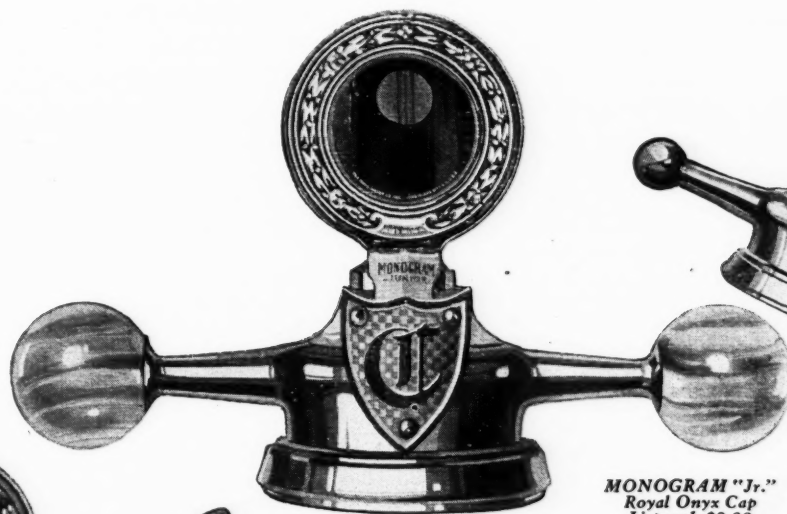
The VIS-A-GAS strains all water and dirt from gasoline, while the action of the fuel can be plainly seen through the glass dome, thus avoiding many troublesome delays and annoyances.

Thousands of these wonderful new instruments are now being sold. Our big National Advertising Campaign in Roto-gravure Sections of leading newspapers all over the country, is sure to increase this demand by many more thousands.

Don't pass up this real money-making opportunity — a real chance to secure this profitable Stromberg Sales Station Franchise.

Write Today for Full Details

STROMBERG MOTOR DEVICES COMPANY
58 EAST 25th STREET, CHICAGO



MONOGRAM "Jr."
Royal Onyx Cap
List each \$8.00



MONOGRAM "Jr."
Bar-Cap
List each \$4.00



MONOGRAM "Jr."
Wing Cap
List each \$4.00



EASYFILL Radiator Cap
For Ford Model "P"
For Chevrolet Model "V"
(A Kingsley-Miller Product)
List each \$2.50



Oval Onyx Gear Shift Ball
List, each \$1.50

MONOGRAM ORIGINAL

Self Locking Radiator Caps and Onyx Gear Shift Balls for the New FORD and CHEVROLET

MONOGRAM Self Locking Radiator Caps are in three beautiful designs for the new model Chevrolet and Ford Cars. And with our new "EASY-FILL" Locking Cap you now have a selection of four Junior Locking Caps, giving a range in price from \$2.50 to \$8.00. (For Ford Caps specify Model "J"; Chevrolet Model "K").

MONOGRAM Caps and MONOGRAM Onyx Gear Shift Balls are stocked by all leading jobbers and are nationally advertised products.

Write us for
Literature and Names of
Nearest Jobbers

THE KINGSLEY-MILLER COMPANY 625 W. Jackson Blvd. CHICAGO

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Above and beyond all other considerations is the fact that the combined trade circulations of *Automobile Trade Journal* and *Motor Age*, approximately 75,000 paid, reach and cover in excess of 85% of the automotive dealer purchasing power in the United States.*

These two well-edited publications are not only subscribed for and paid for, but command the confidence and respect of the consequential components of our vast net work of automotive dealers from the Atlantic to the Pacific, and from Canada to Mexico.

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Chilton Class Journal Company

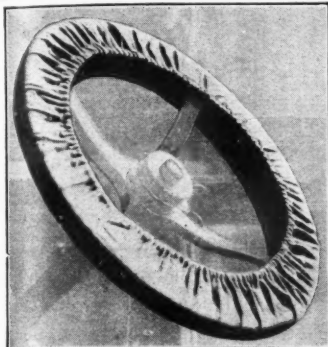
PHILADELPHIA

Publishers of Automotive Business Papers

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AUTOMOBILE TRADE JOURNAL
MOTOR AGE
AUTOMOTIVE INDUSTRIAL RED BOOK

MOTOR WORLD WHOLESALE
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COMMERCIAL CAR JOURNAL
OPERATION & MAINTENANCE

*This fact is proved. A copy of the proof will be sent if you request it.



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CARPO COVER CO.
845 8th Ave. New York City

CARPO STEERING WHEEL COVERS
Keep Steering Wheels Clean While Car is Being Serviced

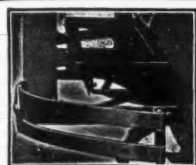
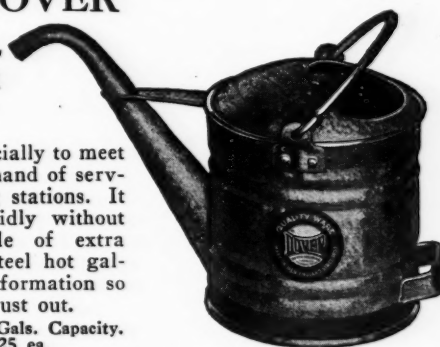
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Designed especially to meet the urgent demand of service and filling stations. It will pour rapidly without spilling. Made of extra heavy black steel hot galvanized after formation so it will never rust out.

No. 360-R. 3 Gals. Capacity.
Price \$3.25 ea.

DOVER STAMPING & MFG. CO.
Cambridge A, Mass.



"Bellevue"
Side-Plate
Trunk
Carriers
Most efficient
for all Cars



The Bellevue Mfg. Co.

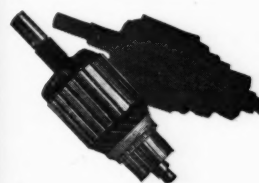
Bellevue, Ohio

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FREE

Write for the Book
"AIR PROFITS"
describing many new uses for compressed air. Shows how to make an air compressor earn greater profits.
BRUNNER MFG. CO.
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Bigler
Better Built Trunks
BIGLER MANUFACTURING CO.
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Rewinding Chevrolet armatures, \$3.00. No charge for new commutators. Rewinding or exchanging any two unit type of automobile generator or starter armature, \$2.50. Any type of Ford armature \$1.50. Special prices on Ford armatures in quantities. H. M. Fredericks Co., Lock Haven, Pa.

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Read It!

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- 2 for new selling plans
- 3 for merchandising ideas
- 4 for hints on buying
- 5 for better servicing
- 6 for lower overhead
- 7 for increased profits

It will pay every dealer
to read every issue of

MOTOR AGE

Weidenhoff

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BATTERY and ELECTRICAL SERVICE
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BREEZE SHOP EQUIPMENT

The Breeze Line of Shop Equipment includes over thirty items—and every one will increase the earning power and efficiency of your shop. Write for details.

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The R and R GIANT


Super-Power Cylinder head fits all models of Chevrolet including 1928. Inverted intake manifold with hot spot drum gives super-charger effect. For prices write R & R Mfg. Co., Farmers Trust Bldg., Anderson, Ind.

HUTTO
MODEL "A" ^{TWIN} _{THREE}
CYLINDER GRINDER

HUTTO ENGINEERING CO., INC.
519 Lyncaste Ave. ~ Detroit, Mich.


\$33

UNCONDITIONALLY GUARANTEED
For Light Cars **\$22** For All Others **\$30**
Per set of four



CHANSON
(Reg. U. S. Pat. Off.)
SHOCK ABSORBERS
Mfd. by CHANSON DIVISION, Illinois Iron & Bolt Co., Carpentersville, Ill.

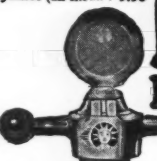
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Senior (all nickel) \$4.50
Junior (all nickel) 3.50



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SELF-LOCKING
RADIATOR CAPS
Ask your jobber or write us
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Eagle . . . \$6.00
Eaglet . . . \$4.00
Includes Initial or Emblem Plate

Every year more motorists are saying . . .



"Goodbye, buggy wheels" **BUDD**
WHEEL COMPANY
Philadelphia • Detroit

STANDITALL
AUTO RADIATOR

Damageproof against repeated boilings and freezings. Built to last the full life of the car. Complete radiators for Fords, Chevrolets, Dodges and Maxwells. Cores for all cars and TRUCKS. If not at your jobber's, write direct.

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—is the time to read next week's issue of **MOTOR AGE**, as you are reading this week's issue this week

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Hydraulic Double Acting
SHOCK ABSORBERS
Write
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Plastic Metallic Packing
Permanently seals leaky water pumps. Metallic packing in plastic form. All cars serviced from one or five pound can. Ask your jobber salesman.
The Conneaut Packing Co., Conneaut, O.
One lb. can, \$1.75

FLEXO (EXPANDER TYPE)
PISTON RINGS
TRADE MARK REG.
SECOND YEAR SATISFACTORY SERVICE
The Motor Necessity That Has Made Good
THE WEL-EVER PISTON RING CO., Toledo, Ohio
Sold most everywhere. If your dealer cannot supply you write us

STATEMENT OF OWNERSHIP, MANAGEMENT, CIRCULATION, ETC.,
REQUIRED BY THE ACT OF CONGRESS OF AUGUST 24, 1912,
of MOTOR AGE, published weekly at Philadelphia, Pa., for
April 1, 1928

STATE OF PENNSYLVANIA
COUNTY OF PHILADELPHIA } ss.

Before me, a Notary Public in and for the STATE and county aforesaid, personally appeared C. A. Musselman, who having been duly sworn according to law, deposes and says that he is the Business Manager of **MOTOR AGE**, and that the following is, to the best of his knowledge and belief, a true statement of the ownership, management (and if a daily paper, the circulation), etc., of the aforesaid publication for the date shown in the above caption, required by the Act of August 24, 1912, embodied in section 413, Postal Laws and Regulations, printed on the reverse of this form, to wit:

1. That the names and addresses of the publisher, editor, managing editor, and business manager are: Publisher: Chilton Class Journal Company, Chestnut and 56th Sts., Philadelphia, Pa.; Editor, John Cleary, 3722 Highland Ave., Drexel Hill, Pa.; Directing Editor, Norman G. Shidle, 3815 Chestnut St., Philadelphia, Pa.; Business Manager, C. A. Musselman, Merion, Pa.

2. That the owner is:
United Publishers Corporation, 239 West 39th St., New York, N. Y.
United Publishers Corporation stockholders in excess of 1%:
Charles W. Anderson, 220 Broadway, New York, N. Y.
George H. Buzby, The Wellington, 19th & Walnut Sts. Phila., Pa.
Anna B. Frank, Pleasantville, N. Y.
Fritz J. Frank, Pleasantville, N. Y.
Mabel M. Griffiths, 165 Montclair Ave., Montclair, N. J.
Lillie Lindsay, 698 West End Ave., New York, N. Y.
James H. McGraw, Jr., 10th Ave. & 36th St., New York, N. Y.
Elizabeth S. Mekeel, 80 Upper Mountain Ave., Montclair, N. J.
C. A. Musselman, Merion, Pa.
A. C. Pearson, 169 Christopher St., Montclair, N. J.
Lella C. Pearson, 169 Christopher St., Montclair, N. J.
Charles C. Phillips, Montclair, N. J.
Charles T. Root, 2 West 67th St., New York, N. Y.
Franklin T. Root, 32 Washington Sq. W., New York, N. Y.
G. Eugene Sly, Grove Park, Asheville, N. C.
F. C. Stevens, 325 West End Ave., New York, N. Y.
W. H. Taylor, 490 Park St., Upper Montclair, N. J.
*Frederic C. Stevens Co., 23 Prospect Terrace, Montclair, N. J.
Dorothy S. Johnson, 3305 Macomb St., N. W., Washington, D. C.

Stockholders *Frederic C. Stevens Co.
Velma S. Stevens, 325 West End Ave., New York, N. Y.
F. C. Stevens, Jr., 325 West End Ave., New York, N. Y.
Velma I. Stevens, 325 West End Ave., New York, N. Y.
Frederic C. Stevens, 239 West 39th St., New York, N. Y.
Ruth S. Kane, Montclair, N. J.

3. That the known bondholders, mortgagees and other security holders owning or holding 1 per cent or more of total amount of bonds, mortgages, or other securities are: (If there are none, so state.) None.

4. That the two paragraphs next above, giving the names of the owners, stockholders, and security holders, if any, contain not only the list of stockholders and security holders as they appear upon the books of the company but also, in cases where the stockholders or security holders appear upon the books of the company as trustee or in any other fiduciary relation, the name of the person or corporation for whom such trustee is acting, is given; also that the said two paragraphs contain statements embracing affiant's full knowledge and belief as to the circumstances and conditions under which stockholders and security holders who do not appear upon the books of the company as trustees, hold stock and securities in a capacity other than that of a bona fide owner; and this affiant has no reason to believe that any other person, association, or corporation has any interest direct or indirect in the said stock, bonds, or other securities than as so stated by him. C. A. MUSSELMAN.

Sworn to and subscribed before me this 30th day of March, 1928.

Commission Expires January 20, 1930.

(Seal) HARRY SMITH

To locate business opportunities
To sell, rent, exchange or buy
To find men or employment

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WILL HELP YOU

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AGENTS OR SALESMEN WANTED
TOOL SALESMAN with car can build a profitable business for himself, selling our guaranteed line of motor tools. Chance to become district manager. York Wrench Co., 3136 Greenview Ave., Chicago.

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RESULTS.

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Increasing Profits— A Growing Business

Every other car that passes
your shop has a chain driven
front end.

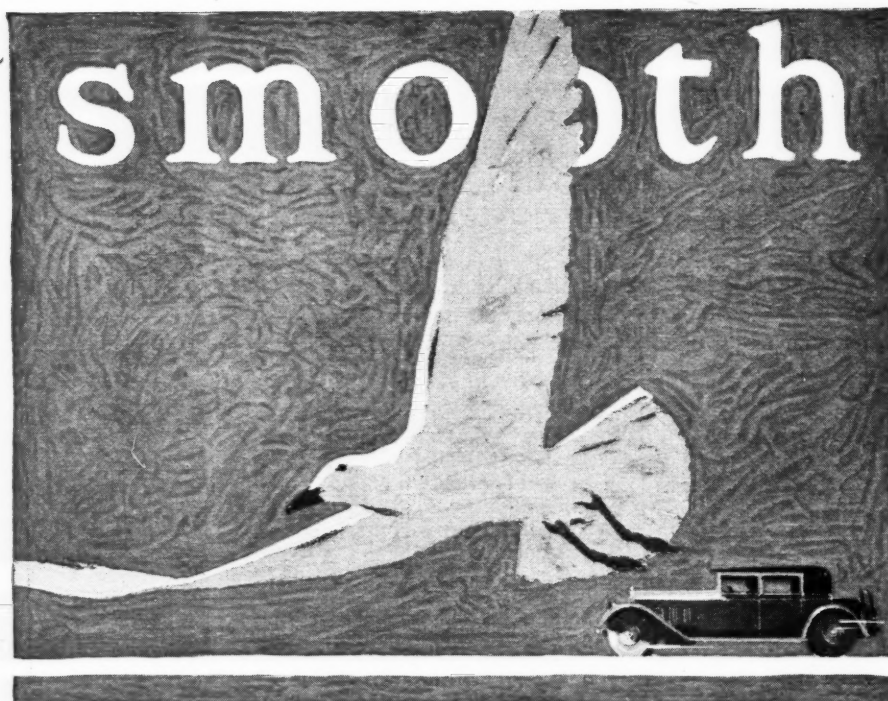
Out of this a bigger business is
developing, which will go to the
man who knows that a reliable
replacement pays in profits
and good will.

Specify "Whitney" Silent
Chains because they are

**QUIET and PERMANENT
REPLACEMENTS**

WHITNEY
SILENT  TIMING
CHAINS

THE WHITNEY MFG. CO.
HARTFORD, CONNECTICUT



Sold in complete sets packed with all fitters for Chevrolet, Dodge, Essex, Pontiac, Star and Whippet, the Bosch Type Y Shock Absorber is a national leader in the automotive field for quick stock turnover. Simplicity of installation and absence of adjustment or service, assures smooth selling. The Bosch Type Y has a new phantom-like action that smooths the rough spots without retarding normal spring action. It is wear, water and dust-proof. Every set backed by a 90 day customer satisfaction free trial guarantee. The new low price, together with Bosch Advertising, helps rapid stock turnover and profit. Set of four, with all fitters in the carton retails at \$22.

AMERICAN BOSCH MAGNETO CORPORATION

SPRINGFIELD

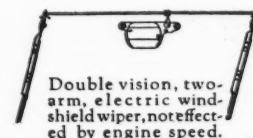
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OTHER BOSCH AUTOMOTIVE NECESSITIES

BOSCH ELECTRIC WINDSHIELD WIPER



Gives fair-weather vision when it storms—all can see all.

BOSCH TRAFFIC-TUNED HORNS, ELECTRIC

Four sizes and types of instantaneous warning signals with distinctive tones and efficient warning.



BOSCH IGNITION FOR FORDS

MODEL "T"

Automatic, dependable Bosch ignition adds new performance to Model "T" Fords, improves power and gives greater mileage.



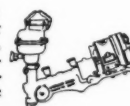
BOSCH UNIVERSAL IGNITION COIL



Replaces ignition coils on all makes of cars and trucks. Gives Bosch standard of dependable performance.

BOSCH MAGNETO and GOVERNOR for FORDSONS

Automatic control for Fordsons. Saves in operation and improves the performance.



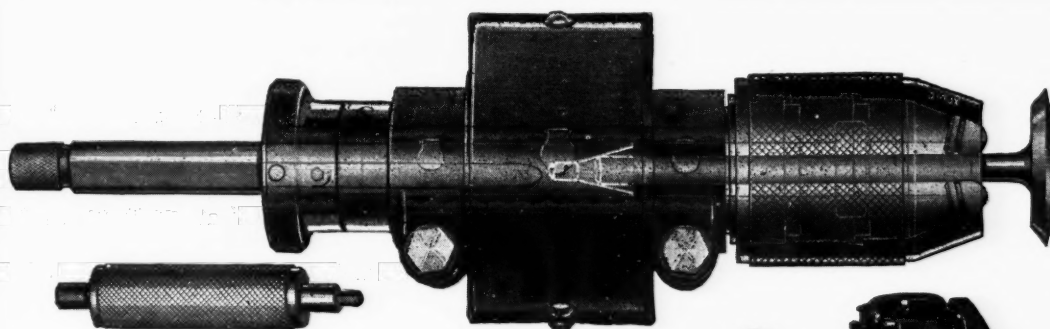
BOSCH SPARK PLUGS



Gas-tight, heat-resisting Bosch Spark Plugs give big, ribbon-like sparks for cold-weather starting.

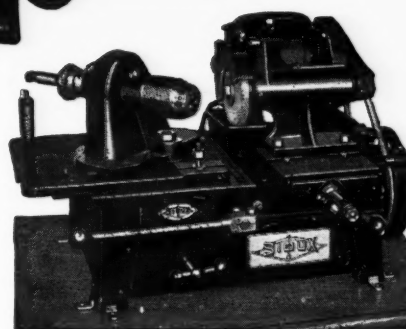
Makers of Bosch Radio Receivers AC and DC Models, Cone-type Reproducer, Power Units and Phonographic Pick-up Device

VALVE FACE GRINDING MACHINE



with the
**Sioux Roller
Chucking System**

Your Jobber Sells It



Men, here's the chuck that's measuring up to the present-day demand for *accuracy with speed* on valve refacing. It's simplicity itself... a new and proved principle.

Look at those roller jaws at the opening ... there are three of them, ... they grip the valve stem firmly, just above the worn surface, —the only proper place for accurate work. When you tighten the chuck, those rollers automatically draw the valve stem back into the aligner. Now notice the aligner with its cone-shaped center. See how it holds the valve stem *perfectly centered*. That means the valve face will be ground in true relation to the entire length of the stem. It is adjustable to different length stems. Even the new Ford valve, with its mushroom end, is a cinch for this chuck to handle.

Only in the Sioux Valve Face Grinding Machine can you get this Sioux Roller Chuck and other exclusive Sioux features. Look into the Sioux before you buy.

Albertson & Co. Sioux City, Ia., U.S.A.



Why Chrysler is today the most sought-after Franchise . . .

Only in a Chrysler franchise can you obtain features which will make your dealership profitable from every standpoint—

The special "52" sales agreement whereby you can sign up for the rapid-selling "52," yet obtain the higher-priced cars—"62," "72" and Imperial "80"—without any definite commitment;

A four-profit line of cars built to a single high standard of quality, one in each of the four great markets enabling you to reach every possible buyer in your community. *Every man you talk to is a prospect for a Chrysler car;*

Superiority in performance, comfort, appearance, quality and value over all cars in each of the four price classes;

Competitive discounts which compare more than favorably with any other franchise;

Fair factory policies, formulated by men who have come up from the selling ranks and know all your problems;

Sales helps and information to help you organize your business on a profit basis;

IN fact, a Chrysler franchise offers you everything that goes to make a permanent and profitable dealership. 1200 new dealers added in the past six months prove its desirability.

This may be *your* opportunity to form a most profitable automobile connection. Perhaps we need a man in your very community. Get in touch with us immediately and we will hold your inquiry in strictest confidence!



CHRYSLER

CHRYSLER SALES CORPORATION
DETROIT, MICH.

CHRYSLER CORP. OF CANADA, LTD.
WINDSOR, ONTARIO

COUPON

CHRYSLER SALES CORP.
Detroit, Mich.

Please let me have, without any obligation on my part, complete details of your new 1927-1928 sales franchise.

Name _____

Street _____

City _____ State _____

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